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AMIGA SHOPPER

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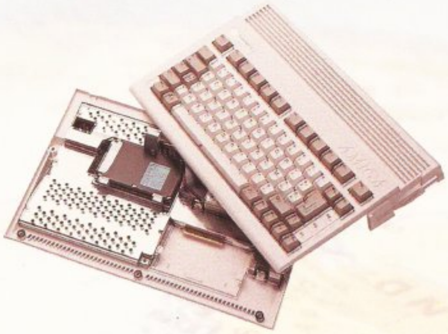
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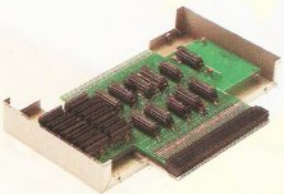
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WELCOME

AMIGA SHOPPER AT A GLANCE GUIDE

To help you find what you want quickly and easily, this is a cross-referenced list of all the products and subjects covered in this month's *Amiga Shopper*. The subjects covered in Amiga Answers are detailed on page 45; the many PD programs covered on page 146 are listed there. The page numbers given are for the first page of the article in which the product is mentioned.

Are there any products or subjects you'd like us to take a look at? Well, just drop a line to:

Amiga Shopper,
30, Monmouth Street,
Bath BA1 2BW.

I made these characters a bit smaller this month because there's so much I want to say. If you flick to page 7 for a moment and read the headline and first paragraph you'll probably return to these words in utter disbelief. 'How on Earth can Commodore discontinue its most popular Amiga?', you might ask, '...there are nearly a million users in the UK alone'. Well those were the first words that came to my mind when I heard the rumours had become an unassailable fact.

But is the news necessarily all doom and gloom? What's happening is a re-structuring of Commodore's product range with its entry-level model becoming the A600 and its A3000 at the top-end. In between there's a gap which will be filled.

The A500 is nearly seven years old and that's an eternity in computing. The A600 might not be anything like the machine that should be replacing it, but there are definitely better specified models in the pipeline. A replacement for the A2000 will be first on the cards - when I don't know - but it's clear the company is leaving the 68000 chip behind and is intent on improving the entire range. This can only be good news.

So what should existing A500 owners do? Two things. One, upgrade to the new chipset and Workbench 2 as soon as possible and thereby ensure you can run future software releases. And two, don't despair about being left out in the cold as far as new 'incompatible' hardware add-ons are concerned.



It's entirely possible that some enterprising developer will come up with a means of hooking up forthcoming A600 add-ons to A500s. Commodore itself expects this to be the case.

But I guess the most confused among you will be those who bought an A500 Plus five months ago only to find that it's now an end-of line product. Cynical marketing ploy to get rid of old stock? I don't think so. You're readily assured compatibility with all future software and you can draw on what are bound to be discounted peripheral prices.

And finally a word to Commodore. Drop the price of the A3000 and A600, get that CD drive on the streets, introduce a trade-up scheme, and pray you've got it right.

Andy Storer

Editor

PUBLIC DOMAIN WORLD

DISKZINE SPECIAL

There are thousands of Amiga programs which are available for little more than the price of a disk. And many more which allow you to try the software free before you buy. Each month in Public Domain World we examine the best of these programs and explain how to get hold of them.

This month our resident PD sampler, Ian Wrigley, scans through his latest batch to pick out the top PD mags-on-a-disk that make for great reading, viewing and listening. These

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offerings start on page 146

AMIGA ANSWERS

23 PAGES DEVOTED EXCLUSIVELY TO ANSWERING YOUR QUESTIONS

Every month in Amiga Answers our panel of experts answer more genuine reader questions than any other Amiga magazine. And for beginners our easy Expert Tips will help you get to grips with your Amiga, and understand the other features in this month's issue.

We answer questions every month on Workbench • The CLI • Comms • Programming • DTP • Video • Business software and more.

THE ANSWERS START ON PAGE 45

FOR A FULL LIST OF CONTENTS, TURN THE PAGE

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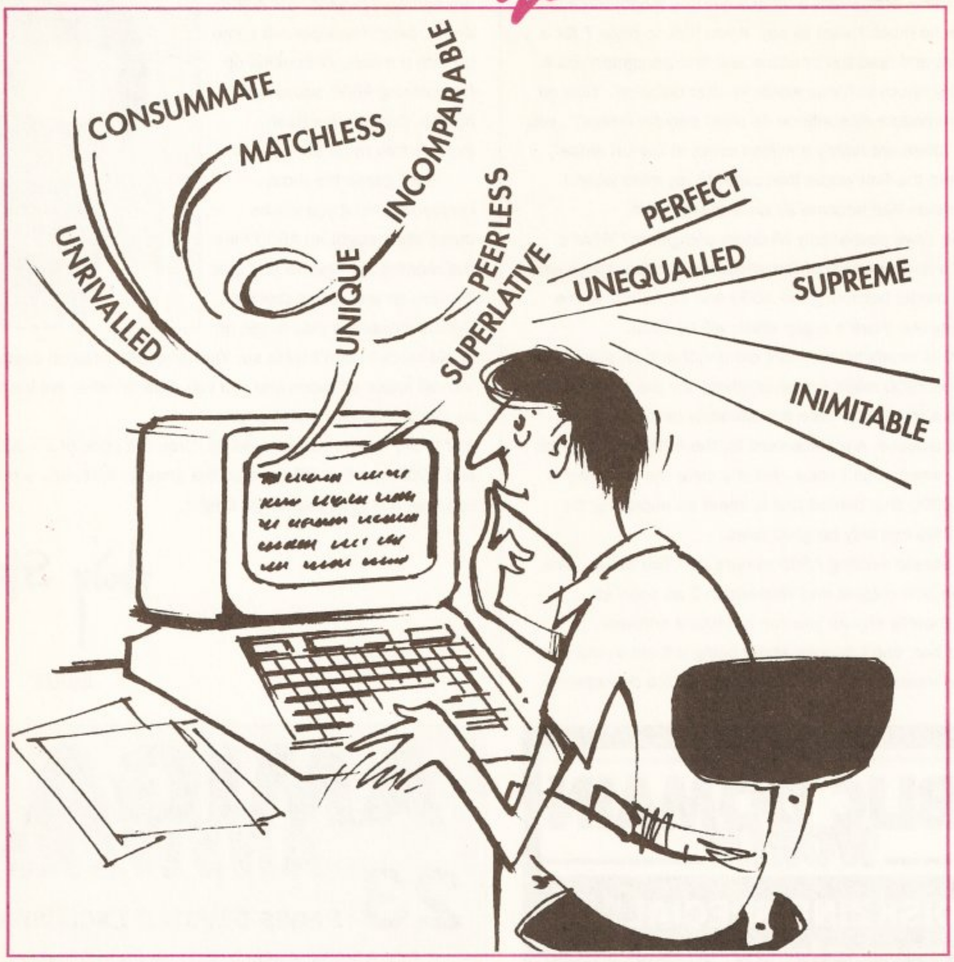
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Deputy Editor: Cliff Ramshaw
Layout Sub-Editor: Diana Taylor
Production Editor: Alison Harper
Consultant Editors: Jeff Walker, Mark Smiddy
Contributors: Jason Holborn, Paul Overaa, Gary Whiteley, Phil Harris, Ian Wrigley, Wilf Rees, Philip Gladwin, Nial Grimes, Charles Ostman
Guest Composer: Johann Strauss
Ad Manager: Margaret Clarke
Senior Ad Sales Executive: David Eckett
Production: Richard Gingell
Fax: 0225 423929
Production Technicians: Simon Windsor, Chris Stocker, Jerome Clough
Assistant Publisher: Stuart Anderton
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Promotions Manager: Michele Harris
Group Publishing Director: Greg Ingham
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Editorial
30 Monmouth Street, Bath BA1 2BW
Tel: 0225 442244 : Fax: 0225 446019
E-mail: amshopper @cix.compulink
Advertising
Rayner House, 23 Higher Hillgate, Stockport SK1 3ER
Tel: 061-474 7333:Fax: 061-476 3002
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So since we've got a bit space here how about winning a year's subscription then peeps! - just check out this ish and try and find an obtuse reference to top 1970's kids TV programme 'Vision On'. You got it? Then just send it in to: 'I never wore loons though I did have a Ben Sherman shirt', Amiga Shopper, 30, Monmouth St, Bath, BA1 2BW. First out the bag wins 12 free issues (and they'll all be different ones)

End of the line for A500

In a shock move Commodore has stopped production of the A500 and A500 Plus. Amiga Shopper brings you the exclusive details of the story of the year

The Amiga 500 range of computers has been discontinued and replaced as Commodore's entry model by the new A600.

Large scale production of the A500 Plus, only released last November, has ceased. Small quantities are still being made, but none will be on sale from high street retailers once distributors' stocks dry up, probably by September.

Amiga Shopper learned of the news from a statement by ZCL, one of the UK's largest distributors. ZCL chairman Don Carter told us: "The A500P is now effectively a discontinued product, although there will be pockets of stock at retail level for the next few weeks... the A500P now looks very much like yesterday's product."

Asked if he was disappointed, Carter replied: "No, it comes as a great relief. The A600 is the future, and the sooner distribution channels are cleared the better. The Amiga market has always been a fashion marketplace where people have wanted bigger, better, faster performance for their machines. They've achieved this so far by bolting on peripherals... The A600



The A500 Plus is 'an end of line product' – Kelly Sumner, Commodore UK's Retail Product Sales Director

represents new technology and all future products will be geared towards it."

OFFICIAL CONFIRMATION

We spoke to Kelly Sumner, Commodore UK's Retail Product Sales Director. He described the A500 Plus as 'an end of line product'.

When asked why it had been discontinued, he said: "Basically, our production line is now on A600s. There are A500s in trade, there may well be more going into trade, but we can't guarantee supply."

Explaining why the A500 Plus was introduced a matter of months before its discontinuation, he said: "Basically, it's Commodore's intention not to hold back on new technology – we will always implement it as soon as possible. We had the Enhanced Chip Set, and it was important to release it, even though we knew the A600 was coming along.

"The A500 Plus wasn't a new machine: it just had a new operating system. All of its major features were already present on the A500. We believe that if we have something to add to an existing machine we should bring it to the market – our customers demand it."

Commodore's Press Officer Andrew Ball said the A500 Plus was a "bridging machine between the A500 and the A60".

In defence of the A500 Plus' short life, Sumner remarked that the PC market changes even more quickly than that of the Amiga. When challenged that PC peripherals were compatible across the IBM range, he said: "The majority of Amiga peripherals can be used with an A600. There is no reason why the



The A500 Plus, only launched in November, yet as of now a machine Commodore is no longer supporting

smart card bus can't be used in the same way as an A500 Direct Memory Access Bus. We'll be bringing the A670 CD–ROM drive out by Christmas for the A600, and that will connect to the smart card bus.

"We try to make the Amiga software and hardware base as compatible as possible. The A500 bus was exclusive to Commodore, but now we've introduced the PCMCIA bus, which is an industry standard. All machines for the next few years will have it."

A500 owners will be wondering

A570 DELAYED

The A570 CD-ROM drive's release has been put back and its specification has been improved, *Amiga Shopper* was also told by Don Carter of ZCL.

Carter also said that the price had been increased to £399.

A spokesman for Silica Distribution claimed that he had had no official word from Commodore. As far as they were concerned, he said, both the A570 and the A670 (for the A600) will be available at the end of May for the currently advertised price of £299.

Commodore's Kelly Sumner confirmed that volume sales of the A570 had been delayed until July, with limited numbers becoming available in June. A similar drive for the A600, he told us, will not be available until Christmas.

On the question of the its improved specification, he said: "The A570 will now certainly be expandable in terms of memory and hard disks." *Amiga Shopper* has been told that these expansions will be internal. Andrew Ball added that the A570's CD audio performance has been improved.

Sumner said that Commodore was still unclear on what the price point of the A570 will be. *Amiga Shopper* expects it to be £399.

TRADE REACTION

News of Commodore's move was met with disappointment by most of the retailers we spoke to. Here is a selection of their quotes:

- 'Worst decision they've made all year' – Gary Anderson of Merlin Express.
- 'Economic disaster from Commodore' – Graham Kelly of Trilogic.
- 'They must be out of their minds' – Tony Ianiri of Power Computing.
- 'The death knell of Commodore UK' – Richard Austin of Evesham Micros.
- 'We will support Commodore with their product range, as we always have. The Amiga platform is undoubtedly still the best for the serious home user, whether A500 or A600' – Giles Harwood of Gordon Harwood Computers.
- 'I was initially very disappointed. It will upset a lot of third party manufacturers who have invested a great deal of money in third party products for a great computer' – Bryan Cobley of First Choice Leeds.

what the future holds for them. Sumner said: "I'm led to believe that a third party will release something to give them a PCMCIA bus for less than £50. Buying this and the new chip set will be cheaper for users than any sort of trade-in deal."

Commenting on the same point, Ball said: "As with owners of the A1000 and A500, users will have access to all the developments we can make available to them. With 1.2 million A500 owners out there, it would be insanity to ignore them."

Commodore stresses the reliability of the A600 because of the surface mount technology it utilises. This enables the company to offer a free one year on-site maintenance warranty, but means that none of the chips are easily replaceable. We suggested to Sumner that A600 owners would be stuck should a new Kickstart ROM be released. He replied: "They may well be." After considering for a moment he added: "It may not be easy for them to change ROMs, but an authorised company could do it, *if* we ever release a new Kickstart. It's expensive, but we have the technology."

WHERE CAN YOU GET IT?

Andrew Ball speculated that a lot of people will be rushing out to pick up the last of the A500 Pluses. Sumner confirmed that small quantities will be available via mail order, explaining that Commodore has commitments to catalogues which have to book their products a year in advance. He said that Commodore hopes to sell between 300,000 and 320,000 Amigas this year, and that the A500 will be a very small part of this, no more than 10 per cent.

Retail outlets will cease to sell A500s as soon as their distributors' stocks have dried up. We spoke to four of the UK's largest distributors: Bonzai Lightning has no A500 Pluses left at all, and neither has Leisuresoft; ZCL is 'low on stock'; Action Byte has a couple of thousand left, but is not sure how long they'll last; and Silica Distribution Limited, who claimed to have no official word from Commodore about the A500's discontinuation, said the company has sufficient stocks to satisfy current demand.

INDUSTRY RESPONSE

Reaction to the news amongst the hardware and software developer community has been mixed.

On the hardware side, Jack Kaufman of Bitcon Devices, distributor of the KCS Power PC Board, told *Amiga Shopper*: "I think it's ridiculous. It doesn't make sense. The A500 was the machine that made Commodore. Punters can now either buy an A600 for games, or go straight for an A1500 – that's a big step. The people at KCS think they can make a trap door expansion connector, but wonder if they should bother. They don't think the A600 will succeed."



Originally perceived as a souped-up games machine, the A600 now forms the centre of Commodore's strategy. But will it sell in sufficient numbers to ensure the future of the entire product range?

Steve Jones of Checkmate Digital commented: "I'll miss the A500 because it was such a good machine. I think Commodore is making a massive mistake, unless the next range of machines is very good. This will cause the loss of a lot of third party hardware support."

In the main, software developers were more optimistic. CDTV developer Jolyon Ralph said: "It was inevitable once the A600 came out. Commodore wants games players to buy that, hobbyists and professionals to buy the A2000/3000. Quite a few third party developers have brought out shoddy products for the A500: Commodore has made it difficult for them to do this for the A600."

Toby Simpson, a games developer for Millenniumm Interactive, enthused: "I think it's an excellent idea. The A500 is a dated machine, a dinosaur nearing the end of its useful life... It's unfortunate for third party developers who have flaunted Commodore's rules, building peripherals that rely on Gary towers and so on. The A600 has no space for these sort of gadgets.

"I believe expansion is possible via the trap door slot. An A601 card is planned to bring the machine up to 2Mb, and I don't think it will be long before someone brings out an 8Mb card. The credit card port will take up to 4Mb of RAM, but it will be expensive. Some sort of expansion is necessary because a 1Mb A600 with a hard disk has only 508K left after Workbench 2, the device drivers and three simple utilities are loaded. Under these conditions, *Deluxe Paint* will only run with a low resolution 16 colour screen. Some 1Mb games – those such as *Sim City* which run under Workbench – just won't load."

Amiga developer and journalist Mark Smiddy was less satisfied. He commented: "I think it's a big mistake. The A500 Plus is Commodore's stock machine for the UK market, the affordable, expandable Amiga. The A600 should have been entry-level placed to bring Amiga computing to the masses, with the undeniably versatile A500 Plus being next in the range."

The most telling reaction to the news will be from the public. When asked what he thought it might be, Commodore's Retail Marketing Manager Jonathon Anderson said: "It's not all doom and despondency. There are a lot of positives in the A600 – the built in modulator and the on-site service warranty."

When asked if there was a message he would like to give to the million plus owners of what is effectively now a dinosaur, he replied: "I don't agree that it's a dinosaur. Third party manufacturers will still make stuff for it. If I were in business I certainly wouldn't stop making products for it just because it's been discontinued."

To gauge users' response, *Amiga Shopper* spoke to John Bickerstaff, chairman of the Independent Commodore Products User Group. He told us: "There's plenty of stuff on the market for the A500 and A500 Plus machines... I don't see it being a problem to our members."

Asked what he thought the public reaction to news of the A500's demise would be, Commodore's Kelly Sumner said: "I can't see that there should be a reaction anyway. If you really think about it, if you buy something and it's updated in a year's time you don't go back to the shop to complain."

The A600 is certainly a step forward, if not as large a step as we may have hoped. While we at *Amiga Shopper* regret the end of the A500 line, we look forward to what the rest of the year will bring from Commodore. All Amiga owners can only hope the company has made the right decision this time. AS

OTHER DEVELOPMENTS

Recent speculation has questioned Commodore's commitment to the Amiga range. William Sydnes, Vice President of Engineering at Commodore USA in West Chester, Pensylvania, released the following statement on the Internet communications system:

"...The majority of Commodore's revenue comes from the Amiga line of computers, and almost all of Commodore's research and development efforts are focused on enhancing the Amiga to continue to provide outstanding power and functionality at a competitive price.

"We have just released the Amiga 600... We have plans to release a number of other new Amiga models this year. While I can't reveal the details of these machines at this point, I would like to say that we plan to provide significantly better capability and value for the user in these new systems... A large and continuing R&D effort exists to improve the performance and functionality of the Amiga chip set... We are examining the possibility of bringing new technology to the Amiga... to take advantage of the price benefits that come with industry standards. I believe these efforts illustrate our strong commitment to the Amiga and CDTV."

The above confirms the rumours that have been circulating about the release of a new range of Amigas. One such rumour concerned the A300, an Amiga designated as a 'console-beater'. We opened up an A600 to discover the legend 'A300' inscribed on the motherboard.

When asked if the A600 was in fact an A300, Kelly Sumner replied: "A300 was a code number for the machine. We're not producing a console-beater: we're in a different market. We're not out to battle with Sega and Nintendo: we're quite happy with the home computer market."

Asked whether he thought that it would have been better to release an Amiga with a 68020 processor, he replied: "Well, such a possibility should be looked at. In this business, whichever way you move you're there to be shot at. Lots of people have bought our machines, and lots of people have built their businesses around them – they get very emotional about them."

YOUR VERDICT?

So what do you think of the decision to discontinue the A500 range? Write to us and let us know at:

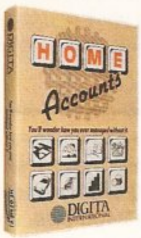
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Meanwhile, for more of your views on these changes turn to page 13.

The Digita range...



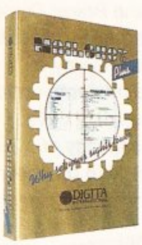
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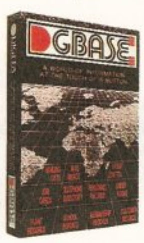
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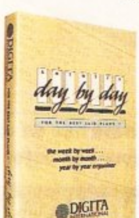
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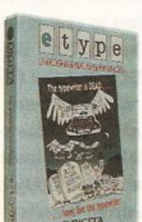
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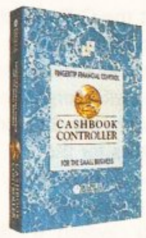


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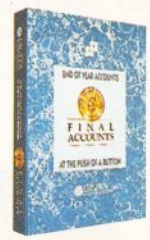


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Hordes descend

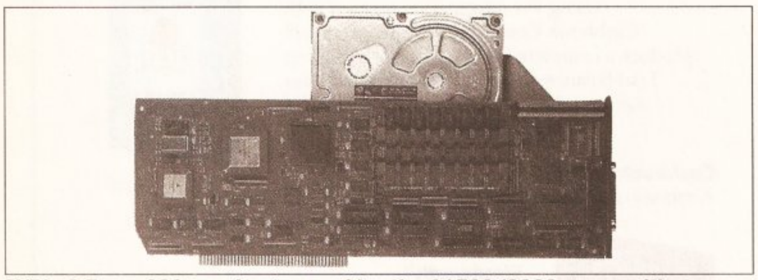
Cliff Ramshaw reports on the Amiga Shopper Show *in Wembley, where the fastest Amigas ever were on display*

The *Amiga Shopper Show* in Wembley was the place to be to witness the future of the Amiga.
Commodore demonstrated its brand new Amiga 600 (which we now learn is to replace the A500 – see page 7 for details), as well as CDTV, a pre-production version of the A570 and a range of titles to run on them.

Commodore was not alone with new products. Numerous third party manufacturers showed incredible add-ons for the existing Amiga range. By ten o'clock on Friday morning the hall was buzzing. A large crowd had already gathered around the Progressive Peripherals stand, and it didn't really disperse throughout the three days (see the Star of the show panel for details). Many thousands of people turned up to see the latest kit and pick up some bargains.

Some impressive new products were on display at the GVP stand. The company's Impact Vision 24 true colour frame buffer, at £1699, was displaying pictures with gorgeous clarity. Next to it were the G-Force range of accelerators for the A1500/2000. Prices for G-Force start at £599 for a card with a 68030 accelerator clocked at 25MHz with 1Mb of 32-bit RAM.

The 286 PC emulator for the A500, which plugs into GVP's best-selling hard drive, caused a stir. It not only offers a 16MHz 80286 processor for running PC applications, but does so without voiding Amiga owners' warranties. A price has yet to be confirmed.



GVP's G-Force 030 accelerator provides the A1500/2000 owner with a 50MHz 68030 processor, 4-16Mb of RAM and a SCSI hard disk controller

SEMINAR CITY

The *Amiga Answers* crew drew the crowds and solved problem after problem.

Twenty lucky people walked away with RAM expansions from WTS Electronics for taking the trouble to put the experts to the test with interesting queries.

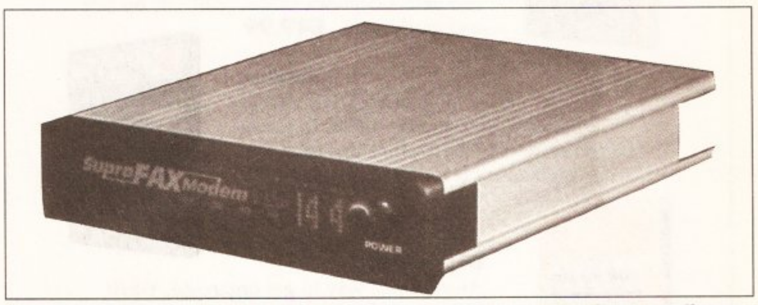
The *Amiga Answers* regulars were helped out by the immensely knowledgeable Dave Winder, probably the largest user of the CIX bulletin board, Toby Simpson, programmer for Millennium, Dave Parkinson, author of The *Kickstart Guide To The Amiga* and our education correspondent Wilf Rees.

Many thanks to all those who came along, both to pose and to answer the questions. And an especial thanks to those who helped the *Answers* crew with their enormous beer habit.

Exciting new products due from GVP in the near future include a fax modem system for around £300 that will not only send and receive faxes but also act as an answering machine by digitally recording or playing back voice messages; and a 24-bit graphics card starting at £1800 that plugs into GVP's accelerator board to provide huge, fully programmable resolutions at incredible speeds, with Workbench compatibility. GVP is on ☎ 0101 215 337 8770. Its products are sold in the UK by Silica Systems ☎ 081 309 1111.

Supra too had on show its range of fax modems. These start at £136 for the 24000 bits per second SupraModem 2400 plus, up to £295 for the 14,400 bps V.32bis model. Supra is on ☎ 0101 503 967 2400. Its products are sold in the UK by, amongst others, Surface UK ☎ 081 566 6677.

A trip to the Power Computing stand revealed a few surprises. The company was showing a read/writable magneto-optical drive for £1199 including case. Cartridges for it, with a capacity of 128Mb, cost £39.95 each. Also on show was a



Supra was showing its line of fax modems. They will operate like an ordinary modem and enable you to send and receive faxes from your computer

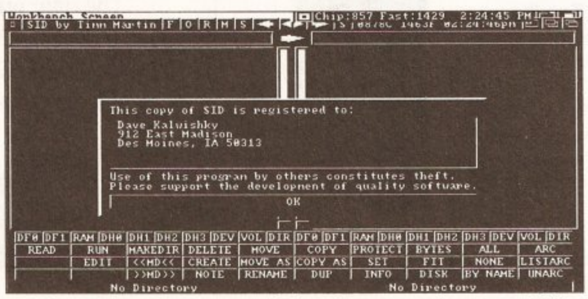
NEWS SNIPPETS • NEWS SNIPPETS • NEWS SNIPPETS • NEWS SNIPPETS • NEWS SNIPPET

SHAREWARE SID PIRACY

Piracy once more rears its ugly head with the illegal distribution of Timm Martin's directory utility *SID 2*.

SID 2 is a completely re-written version of *SID*, offering many new features. Although *SID* was public domain, *SID 2* is shareware, requiring a $25 registration fee to give the user access to its full features. Its documentation stipulates that it is not to be distributed by any PD library in Europe until its release on last month's *Amiga Computing*'s cover disk.

Copies were sold prior to this by 17-Bit Software. *SID 2*'s registration screen states bluntly that use of the program by anyone other than the registered owner is theft. We spoke to Steve Colbeck of 17-Bit Software, who said he was aware of the problem and had withdrawn the program from circulation. "We got it from some guy in London. We sent out three to four copies maximum before stopping it."



The registration screen of the shareware directory utility *SID 2*. This copy, sold by 17 Bit Software, is clearly registered to an American user

PHEONIX LAUNCHES PERIPHERALS

Pheonix has launched a collection of peripherals on to the Amiga market.

The collection is comprised of a keyboard-switchable ROM sharer (£34.99), a MIDI interface (£29.99), a stereo sampler with software (£39.99), a joystick/mouse switcher (£16.99), a SCART/VCR switcher (£19.99), an external floppy disk drive (£49.99) and a drive booster (£29.99).

New peripherals are planned for the A600. Pheonix ☎ 0532 311932.

on Wembley

new grabbing cartridge for £55 and several new RAM expansions. Power confirmed that it will be releasing a 1.4Mb capacity floppy drive for the Amiga within the month. Power is on ☎ 0234 843388.

The Rossmöller stand attracted lots of attention from hard drive owners. On display was a hard disk back-up system which connects to the Amiga's parallel port and dumps information to standard video tape. 150Mb can be saved or loaded on an hour of tape. At £70 including software, the system works out far cheaper than conventional tape streamers. Rossmöller is on ☎ 01049 2225 2061. Its products are distributed in the UK by Sysons Associates ☎ 081 907 2100.

The *Amiga Shopper Show* demonstrated that the Amiga goes from strength to strength, which bodes well for the *World Of Commodore Show* to be held in the autumn. See you there!

BARGAINS GALORE

Streams of happy shoppers wandered away from Wembley clutching boxes large and small.

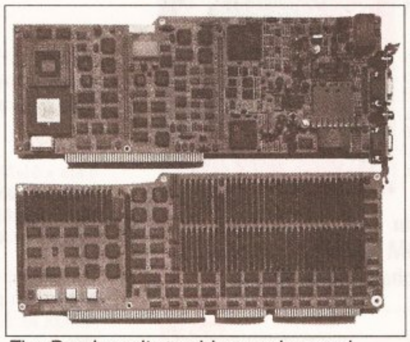
Prices at the show started off good and got better as the days went by. We saw mice selling for as little as £9.95 and 0.5Mb RAM expansions for £12.99. ROM sharers were going for only £12, Fatter Agnuses for £29 and Kickstart 2 ROMs for £27. The *Amiga Shopper Show* was certainly the place to be for those looking to upgrade.

Discounting on Amigas was heavy too. Silica Systems was off-loading A500s for as little as £259. A500 Pluses were selling for £309, and even the A600 was discounted by £50 to £349.

STAR OF THE SHOW

The star of the show was undoubtedly Progressive Peripherals & Software's range of 68040 accelerators. These and the company's stupendous Rambrandt graphics system ensured an awed crowd heaved around the stand throughout the three days. The three over-worked Americans manning it hardly had time for a break. Their list of advance orders stretched to several sheets of A4.

The 68040 accelerator for the A500 was really pulling the crowds. It plugs on to the A500's mother-board to give a 40-fold speed increase. A Kickstart 2.04 ROM is included with the board, so if you have an old 1.3 ROM on your motherboard it is possible to switch between the two when in 68000 fall-back mode.



The Rambrandt graphics card wowed the crowd with its real-time rendering and stunning full colour display

The board is completely compatible with all hard drives, unlike some which have problems with Direct Memory Access. It takes up to 8Mb of 32-bit RAM; it will be available with 4Mb for the incredibly low price of £725. Now Amiga 500 owners can have the power of true workstation computers.

Also on display were 68040 accelerators, clocked at both 28 and 33MHz, for the A2000 and A3000 computers. Zeus, the accelerator card that comes with a SCSI-2 hard drive controller and is capable of taking up to 64Mb of RAM, was running a flight simulator with a perfectly smooth, judder free frame update. It was loading its software from a SCSI-2 read/writable magneto-optical drive. Although such drives are normally very slow, this one, because of the immense increase in speed given by the SCSI-2 standard, was running at a speed equivalent to an ordinary hard drive.

Nearby sat an Amiga 3000 with the Mercury accelerator card installed. Its 3D display simulated a flight through a beautifully drawn canyon at breathtaking speed.

The most stunning graphics to be seen were generated by the Rambrandt graphics card. Using two Texas Instruments graphics chips, this board provides A1500 computers and upwards with displays of up to 1024x1024 pixels in 32-bit colour.

At the show it was displaying a multi-coloured and shaded three-dimensional polygon bouncing around a ray-traced screen. Incredibly, the polygon was being rendered in real time. Other tricks demonstrated include the ability to use fading effects between one frame buffer and another, and a hardware magnify facility. Rambrandt can also digitise a 24-bit image in 1/30th of a second – all of this for the incredible price of £2200, which includes a copy of *3D Professional 2*. A cut-down version of Rambrandt is planned, which will have only the one frame buffer. Software for Rambrandt is currently under development by a number of third party developers.

PPS is on ☎ 0101 303 825 4144. Its products are distributed in the UK by Power Computing ☎ 0234 843388.

WS SNIPPETS • NEWS SNIPPETS • NEWS SNIPPETS • NEWS SNIPPETS • NEWS SNIPPETS •

WORDWORTH NEWSLETTER

Digita is sending registered users of its *Wordworth* word processor a newsletter and an upgrade.

Users will be receiving revision 6 of *Wordworth 1.1*. It includes better support for Star, Citizen and Epson printers, as well as the new Epson Esc-P with internal scalable fonts.

Users short on memory will be glad to know that the spelling checker has been made into a library file, releasing 80K when not in use.

The newsletter has 50 pages of hints for getting the most out of *Wordworth*.

A collection of clip art, called the *Official Wordworth Clip Art Disk*, has also been released for the price of £14.99. Registered users are being given the chance to buy it for £4.99.

Digita is on ☎ 0395 270273.

PRINTER DRIVERS FROM FUJITSU

Fujitsu has released two printer drivers into the public domain to enable owners of its printers to get better results.

The disk, which should soon be available from dealers with the purchase of a Fujitsu printer, contains two drivers: one for the DL range of dot matrix printers, and one for the DPL24C+. The drivers are compatible with both 1.3 and 2.04 versions of Workbench and enable users to print in the maximum resolution of 360x360 dots per inch. Fujitsu is on ☎ 081 573 4444.

NEW BOOK FOR SYSTEMS PROGRAMMERS

Bruce Smith Books has released a book which teaches programmers the intricacies of writing for the Amiga's operating system.

Mastering Amiga – System, by Paul Overaa, assumes knowledge of C, and explains, with the aid of example code, communication with the system, the handling of tasks and processes, working with libraries, and how to incorporate IFF graphics.

Mastering Amiga – System costs £29.95 from Bruce Smith Books ☎ 0923 894355.

PHOENIX

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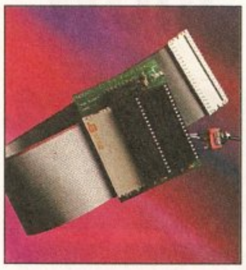
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SHOCK OF THE NEW 1

So Commodore is set to release a new generation of Amigas. What is to happen to all Commodore's present Amiga owners?

I, like many others, bought an A500 Plus at Christmas. Many thousands were sold. Hundreds of thousands of A500s have also been sold yet Commodore are now to do away with them.

Yet the machines which they see fit to replace them with are, in my opinion, a compromise between evolution and revolution and, as such, won't sell.

Starting with the A600 – a 'serious' machine which lacks a numeric keypad and an IDE rather than a SCSI port.

The memory cards are also a puzzle. The hope of seeing serious software implemented on them is nearly non-existent. Software companies doing so would cut themselves off from the huge body of serious users who own A1500, 2000 or 3000 machines. Games producers would risk the same fate of alienating games players on A500/Pluses.

On the subject of memories, why has the trapdoor expansion system been changed again? From what is known the A500 Plus system offers the same capabilities as that on the A600 so there will be no technical advantage. It means that KCS and expansion manufacturers will have to make further modifications.

David Lambert
Glasgow

SHOCK OF THE NEW 2

In the June edition of last month's magazine, I read with interest all the information made available about the new A600. I do take issue however with the article complaining about the lack of improvement of the A600 over the A500 and the A500 Plus. What do A500 users do with their machines? Mainly games and such mundane tasks as word processing and the like. Intensive users (desktop video and raytracing) should be using the bigger machines preferably with the accelerator cards. I regard my own 1.3 A500 as a very poor cousin of the A600 especially with the hard disk option.

Although I have a monitor now, I know how dreadful the modulator is, awkward and vulnerable. I plan to make my move up as soon as I can sell my machine; it's a shame that the trade-in deals are so ridiculous.

Julian Richards
Stevenage

SHOCK OF THE NEW 3

Commodore is trying to sell outdated equipment at vastly inflated prices. The A3000 and A1500/2000 series models are six feet under compared to other machines in their price range and I'm afraid to say that the A500(+) may soon follow unless something else is done quickly. It does seem rather backward to be typing this letter on a 7 year old machine with an 8 or 9 year old 68000.

At the high end the A3000 is a ridiculous purchase. For the same money it is possible to buy a 486 PC with SVGA, an Amiga beating sound card, a huge hard drive and loads of memory. At the mid range, a 1500 is going to get its behind kicked by similar priced 386 models. A 386 is a vastly more powerful system especially with 256 colours at a resolution the Amiga can't match with only 16 colours at once.

If I was the big boss of Commodore I would drop production of all existing models except the 3000. I would sell the 3000 for £1100 at the most with an SVGA graphics card. I would make the A800 with similar specs to the 1500 apart from a 68020 and new graphics card. This would sell for £700. For the low end I would make a 500 comparable system. It would be called the A600+. It would be a closed box, but otherwise the same as an 800.

This is the only way I could see Commodore pulling themselves out of the pit they have got themselves into. If CBM don't take these courses of action straight away then I can see the PC market taking over the serious market and serious games market with Nintendo's Super NES taking the market away for arcade games.

David Walker
Norwich

SHOCK OF THE NEW 4

As Commodore has released yet another version of the Amiga, namely the A600, I am now left pondering as to which user they are aiming at this time.

The A600 utilises a modern design – surface mounted technology, a new Gayle chip, memory cards etc – and yet it doesn't have a numeric keypad. You'd have thought that it would have had at least an embedded keypad (like any decent lap top). I think perhaps Commodore just didn't think this option through carefully enough.

The reasons for the latter seem to be because it's supposedly a games machine and yet this 'games machine' can be laden with internal hardware such as an 80Mb hard drive at a cost of approximately £740. Add the other peripherals needed to make it anything like a decent system – monitor, joysticks, disk box, mouse-mat, printer etc – we're talking £1000 plus here!

I realise that the machine doesn't have to have the hard drive installed, but why are all of these options available for a 'games machine'? Quite frankly, this leaves me very puzzled.

Steve Gulliver
Southampton

Well, by now you'll have probably read the news story on pages 7 and 8 so you can perhaps glean my opinion on the decision to scrap the A500 there.

But I just want to add this by way of a reply. The A500 is seven years old and is definitely in need of a serious upgrade. The A600, however, is not that upgrade – a new A2000 will fit that bill better. But I'm sure there's nothing to be gained by waiting for this to appear as there's just no telling how long you might have to wait. Serious users who want to use their Amigas for more heavy duty processing should look to an A3000 rather than buying expensive peripheral enhancements to their existing system. The A3000 is overpriced here so would-be buyers should look at importing one from either the US or Germany until Commodore either cuts the price here or institutes a trade-in deal.

Owners of A500s, A1500s and A2000s who have heavily invested in upgrades and enhancements should buy WorkBench 2 as soon as possible because from now on major new software releases will become WB2-only titles. It would also be a good idea for them to start praying that some enterprising third party developer brings out some kind of adaptor which will enable new A600 peripherals to run on first generation machines fitted with the Enhanced Chip Set.

The above advice is based on my current understanding of a situation which, as we go to press, still remains unclear. By next month we're sure to have a much clearer picture so please stay tuned.

IS MY MONITOR ELECTRICALLY UNSAFE?

I am writing in reference to your article in Issue 14 about Philips grey imported monitors.

I was totally disgusted that I was one of the 20,000 people who purchased one of these monitors. How were we supposed to know what serial numbers were for export? I purchased mine from a company in Swindon that advertises in all the Amiga magazines so you would not think they would sell monitors which did not comply to British Standards.

What I would like to know is where does this leave us?

T Clifton,
Swindon

This is just one of many letters and phone calls from readers worried that their Philips monitors are about to blow up. I can only re-iterate the statement made by Philips which points out that 'purchasers of the grey import monitors, identified by the product codes 10G or 20G, may find that they lack a British power lead and will have to ensure that they properly earth the monitor when changing the power lead before use.'

So there you have it: just make sure you use a British power lead and it's correctly earthed. If you have any doubts about how to do this then contact a qualified electrician.

continued on page 14

continued from page 13

ARTIFICIAL LIFE

I was very pleased to see the start of your series on Artificial Intelligence. May I let you know of an article which goes one step further and describes Tom Ray's work on Artificial LIFE – and I don't mean cellular automata (ie the *Game of Life* programs).

Ray's work has an initial lifeform and rules of evolution, new 'creatures' evolve, 'parasites' form, creatures develop immunity and parasites die, social groups of creatures begin to form as well as other features seen in nature.

The article can be found in *New Scientist*, P36, no 1809, 22 February 92. Perhaps given the right set of rules we could just sit back and 'evolve' Artificial Intelligence?

Mark Burbidge
Edgbaston

I too have been enjoying Philip's articles and you're not the first reader to have directed me to the *New Scientist* piece. I see no reason why we shouldn't extend the series to incorporate 'AI colonies' either as long as it centres on practical programming examples that can run on an Amiga. I'll have a word with Philip about it.

VERSION 2.147 REV 3.6

***Nightmare on Elm Street 5*, *Rocky 6*, *Halloween 5*, *Protext 5*, *Protext 5.5*, Workbench 1.2, Workbench 1.3, Worksbench 1.3.2, Workbench 2, Workbench 2.04 and the world of cinema thought the title *Naked Gun 2½* was funny.**

Well they can't pull the wool over my eyes with all these claims of 'continued product development'. What they really mean by this is catching-up-with-the-ideas-they-didn't-get-round-to-including. They're just money minded like any other manufacturer.

They tie themselves down to a release date and then release their software on that date whatever state it's in just so that they can start selling their product. In so many software reviews you read 'why couldn't they have just included this one extra feature to lift it above the competition'. Then at the end of the article you read 'version 1.000001 is already on the way, let's hope it's better'.

It's not a new version, they're just catching up with what they left out. Why can't hardware and software developers get their products to an acceptable standard and then release it even if it means being a month or two late?

Mark Fox
High Wycombe

I agree that the Amiga does seem to suffer from an abundance of version numbers but I suppose this just goes to show what a busy bunch of beavers all those developers really are. Software is always in production in so far as no piece of software is ever finished. Given that existing users can upgrade for free or for a very small fee then this seems fair enough. Better that, than you buy an application that remains static and fails to offer enhancements included by competing authors.

GREETINGS FROM AFAR!

According to our sales people, *Amiga Shopper* sells 20 copies a month in Iceland, 550 in Holland, 700-odd in Australia, 350 in New Zealand, 60 in Malta, 100 in Greece and 80 in Brazil!
I'd therefore just like to take this opportunity to say a big HELLO and ask that you send plane tickets to me, Andy Storer, at 30, Monmouth St, Bath, UK, BA1 2BW. My wife and I will be delighted to come and visit you at your home this summer.

CHANGING CHANNELS

Did anyone in your office see the item on the ITN News on April 14th on the proposals for the new Channel 5 TV?

It is proposed to broadcast on the frequency which is used at present for video recorders to communicate to the TV sets. The successful contractor for Channel 5 will be expected to provide a service in people's homes for altering video recorders to a new frequency to avoid a signal conflict. No mention was made of home computers.

My Amiga 500 Plus uses an A520 Video Adaptor which works on the same frequency as my video recorder.

Do you see any major problems or costs with having to change the frequency of the Adapator link? If there is a problem or significant cost, should the computer industry be lobbying the Government? What do you think?

Richard Stubbs
Solihull

I just can't see this situation arising. The costs involved with just the video side of the equation would be enormous.

If on the other hand there is a degree of truth in the story and it's not just sensationalism I'd have thought manufacturers across the board would already be lobbying the broadcasting authorities.

So I reckon we should just wait until there's an official pronouncement, and I, as yet, haven't come across one nor have any of my colleagues.

A PERFECT WORLD?

I think I've got some interesting news for you and all readers of this magazine.

I am sure you know about the discussion on whether WordPerfect will publish a new version of *WordPerfect Amiga* (Wp5.1). The whole time I read in several mags that WordPerfect won't publish a new version because of piracy and the (slow) Amiga system. This is not the truth.

I read an article in a German Amiga mag about this hot topic. It was a statement from a member of the German WP-Team. It says the reason why they don't want to bring out a new improved version is that they don't get any support from Commodore. But why isn't Commodore supporting Wordperfect? The statement from the WP member says also that everybody who is interested in buying a new version should write a letter to Commodore!

Please tell all Amiga fans to write to Commodore and force them to support this new version. This is the chance to get our computer more professional.

Stefan Muller
Kaiserslautern

WordPerfect isn't all that great anyway. It may be an industry standard of sorts on the PC but in my opinion it's over-priced and too memory intensive.

However there may well be many users out there who are familiar with the program on PCs at work and want to use it at home on their Amigas. If this is the case then they should ask Commodore – on 0628 770088 – whether it really isn't giving *WordPerfect* sufficient support. My guess is that CBM would love to have *WordPerfect* available on the Amiga but it's WordPerfect who don't see the Amiga as being worth supporting

KEYBOARD CAPERS

Re: Lee Brown from Motherwell's letter in the June issue.

The problem you have with your mixed up keys is purely a software problem and is therefore easy to remedy.

In your startup-sequence there is a command 'setmap USA' (or similar). This sets the keymap of the computer to an American configuration. Simply change this to 'Setmap Gb' and all will be well.

Simon Funnell
Hampshire

Thanks for that little tip Simon. You're one of a number of readers who helped Lee out on that one. Talking of tips, there'll be 200 of the most essential ones our experts can put to paper in next month's issue.

IF ONLY I'D REALISED...

CONTINUING OUR SERIES OF HANDY TIPS BRINGING YOU THE BENEFITS OF HINDSIGHT...

I can laugh about it now, but I believed the Workbench Title Bar memory listings.

I have a 500+ with a CVP Series II hard disk fitted with Fast RAM by the supplier. Workbench 2.04 assured me that I had the RAM that I thought I had. However *DPaint* kept crashing at about 20 frames of HAM animation and *Vistapro* would not load at all. My suspicions were confirmed by a Basic program that stored a 25000 character string in multiiple locations until the machine ran out of memory. The result was equal to the chip memory.

Opening the hard drive showed that it had been fitted with four 2MByte SIMMs instead of two 4MByte SIMMs. After removing one of the SIMMs and reassembling, the Workbench still proclaimed 2MByte Chip + 8MByte Fast RAM! I returned the hard disk to the supplier. It came back with two 4MByte SIMMs and all is well. I can laugh about it now but don't trust the Workbench!

Patrick McKeown
Sidcup

Ahaa! Well spotted there Patrick, a fiver's on its way to you. I hadn't come across this devious little bug myself but now we all know. How about sending us the listing for your 25,000 character memory checker and winning yourself another twenty quid?

Meanwhile if any other readers can pass on tips learnt from problems experienced and overcome then just send them to: 'I can laugh about it now', *Amiga Shopper*, 30, Monmouth St, Bath BA1 2BW.

23 SKIDOO

If you have an MMU and most accelerator cards do, you don't have to buy a ROM sharer with the 2.04 Enchancer pack. You simply need a copy of 'SetCPU' and the 1.3 Enhancer pack. During boot press <CTRL> and the <D> key to break the startup script. Now enter 'SetCPU KICKROM DFO:' and place the 'A1000 Kickstart' disc in drive DFO:. The hand holding a disc will appear and flash approximately 23 times. Now you can insert your autobooting 1.3 game in DFO: and play as if you were using the 1.3 ROM.

Andrew Thomson
High Wycombe

Well who'd have thought it – you get some right tips in *Shopper*! Have £5!

SOMETHING

PD SPECIAL PD SPECIAL PD SPECIAL PD SPECIAL PD SPECIAL

Does the public domain offer a viable alternative to commercial software? Jason Holborn investigates the serious options

Everyone knows that computing can be a lot of fun, but it can also be a very expensive affair. Just to prove it, let's try a little experiment. If you've already splashed out on at least a couple of serious software packages (a word processor and a paint package, for example), try to mentally calculate just how much you've spent on your system already. Don't include your Amiga and any extra hardware though – we're talking commercial software only here. Finished yet? Quite an eye-opener, isn't it?

Fact is, buying serious software can be very expensive. Commodore does thoughtfully try to save your trouser pockets a little by including a couple of useful packages with most Amigas sold these days, but it's very unlikely that the bundle of disks which you find at the bottom of your Amiga's packaging will fulfil all your computing requirements (if any!). OK, *DPaint* can be a lot of fun, but computing isn't just about painting pretty pictures.

A WEALTH OF PD

So what do you do if you're after a decent collection of serious software but your overdraft resembles that of a third world dictatorship? Trying to claim that you're struggling to turn your family home into a democracy won't bring in aid from the United Nations, so there remains only one solution – public domain software.

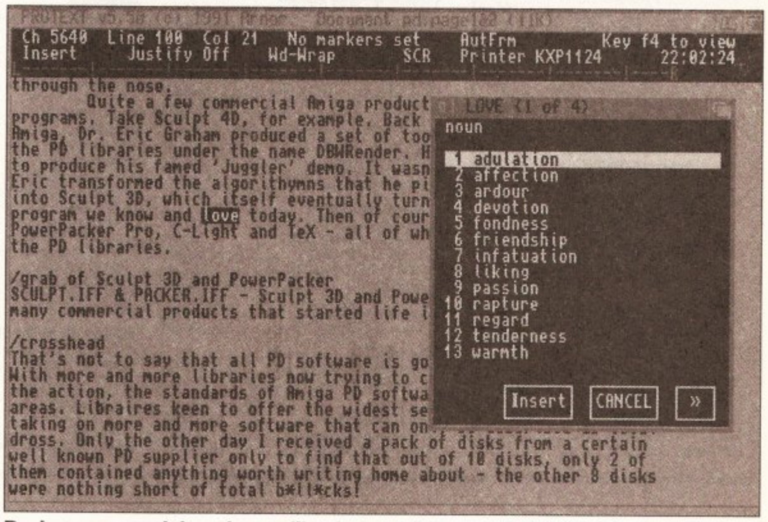
Most users now appreciate the concepts behind public domain software, but there's still one whacking great spanner in the PD works which stops many users from taking advantage of the masses of freebie software out there just waiting to be snapped up – that is, if the software's any good, why's it free? After all, everyone likes to make a quick buck now and then, so any programmer who spends months poring over source code only to give it away has to be a few cans short of a six pack. Right?

WHAT'S THE CATCH?

It's perfectly natural to be sceptical about PD software, but it pays to understand just how PD works. Although PD programmers don't generally get paid for their wares (shareware and licenseware being the exceptions), the PD libraries serve a dual purpose. OK, you get your free software, but the programmer gets something out of it too – he gets recognition.

Recognition is very important within most trades, even magazine publishing. After all, if you read a review of a product written by someone who you recognise as a regular contributor, then you're more likely to trust the reviewer's judgement. If it's some Tom, Dick or Harry whose name is about as familiar as the chap who operates the camera on *News at Ten* (I bet you can't remember his name!), then you're bound to be a little sceptical.

Recognition is perhaps even more important for programmers. Little Johnny who lives in downtown suburbia has little chance of impressing the top dogs at a top software house unless he can prove that he can come up with the goods. With a couple of popular PD programs under his belt, a software house is far more likely to take an interest in his talents. At the end of the day, the software house gets its hot new talent, little Johnny gets a good job and Joe Public has a couple of good programs and will probably buy Johnny's commercial software on the strength of his PD efforts. As you can see, everyone comes out on top!



Buying commercial packages like Arnor's *Protext 5.5* can burn a substantial hole in your pocket. But can the PD libraries offer a top-notch substitute?

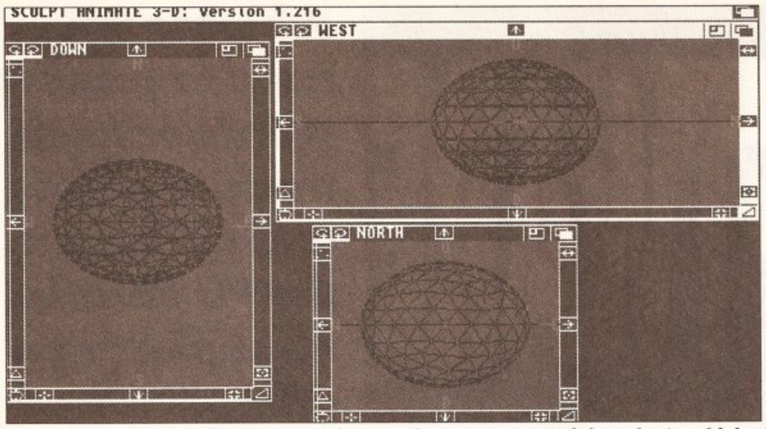
ANIMATOR ANONYMOUS

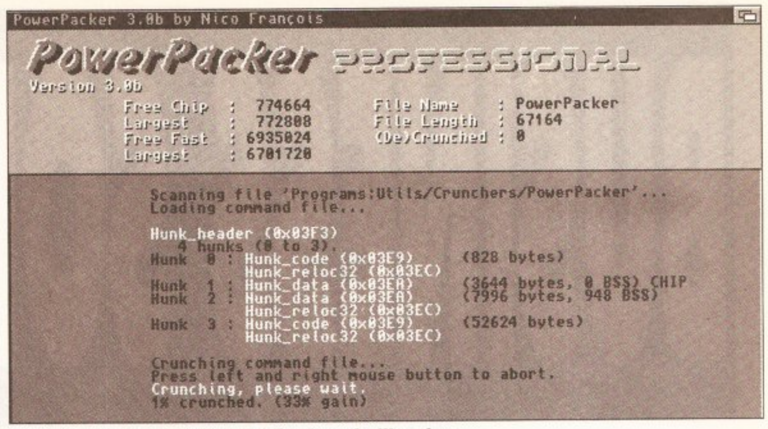
A good example of this is the prolific PD animator Eric Schwartz. Despite the fact that very little has been written about the man himself, his name has become synonymous with Amiga animation. These days, it's almost impossible to read an article on the subject without his name in the small print somewhere! With this kind of recognition behind him, Eric has been inundated with offers of work from software developers across the world. As you can see, a little bit of effort in the early days of a computing career can lead to big bucks later on! Then there's Steve Tibbet (*VirusX, ScreenX* etc), Teijo Kinnunen (*MED, OctaMED 2*) and Timm Martin (*SID 1.6*) – all of whom are household names among Amiga PD enthusiasts thanks to their activities within the PD sector.

Many PD programmers also use PD libraries as a launch pad for programs which eventually transform into commercial products. By releasing early test versions of a package into the PD circuit, programmers can gauge public interest, sort out design problems and find bugs easily by getting you, the PD consumer, to act as an unpaid beta-tester. Sneaky, eh? Obviously most people don't mind this kind of exploitation because it means that you get your hands on a decent piece of software without having to pay through the nose.

Quite a few commercial Amiga products started life as PD programs. Take *Sculpt 4D*, for example. Back in the early days of the Amiga, Dr Eric Graham produced a set of tools which he released into the PD libraries under the name *DBWRender*. He himself used these tools to produce his famed 'Juggler' demo. It wasn't until much later that Eric transformed the algorithms that he pioneered within *DBWRender* into *Sculpt 3D*, which itself eventually turned into *Sculpt 4D*, the program we know and love today. Then of course there's *OctaMED, PowerPacker Pro, C-Light* and *TeX* – all of which started life within the PD libraries.

That's not to say that all PD software is good stuff. Far from it. With more and more libraries trying to capture their own slice of the





***Sculpt 3D* and *PowerPacker* are only two of many commercial products which started life out there in the public domain libraries**

for NOTHING

action, the standards of Amiga PD software have dropped in many areas. Libraries keen to offer the widest selection of PD disks are taking on more and more software that can only be described as total dross. Only the other day I received a pack of disks from a certain well known PD supplier only to find that out of ten disks, only two of them contained anything worth writing home about.

THE GOLDEN AGE OF PD

Back in the golden era of Amiga PD, PD libraries were far more choosy about what material finally made it on to their disks. Take the Fred Fish collection, for example. Good old Fred has been compiling disks for his renowned library for almost seven years and despite the fact that the library now contains over 600 disks, virtually all of them contain at least one good program. Let's face it, that's a pretty impressive achievement!

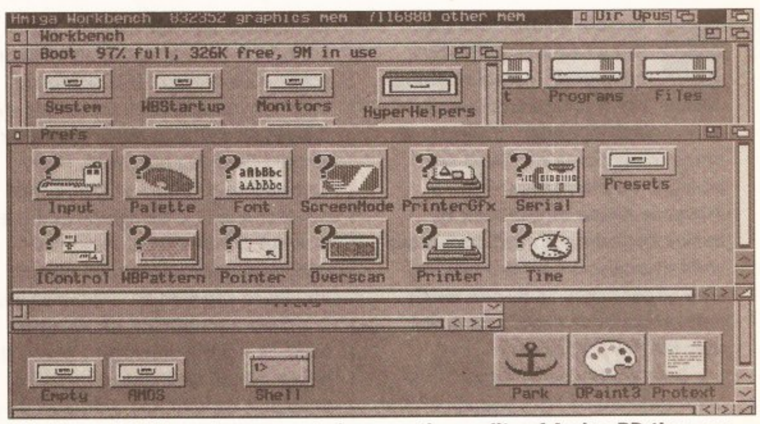
While the standards of certain types of program have dropped, Amiga PD has been improving with leaps and bounds in other areas. Utilities are one such area. With the recent release of Workbench 2.0, many PD programmers have started to conform to the programming guidelines which Commodore set down, resulting in far more professional software that not only works better, but also shares a common look and feel. In many ways, Workbench 2.0 has done more to improve the quality of PD utilities than years or scornful prose from the computing press.

So what do the PD libraries have to offer the serious Amiga user? Well, If you can think of a task which could be handled by your Amiga, then chances are that some clever dick PD programmer has already written it for you. Some of the programs that are available are a little weird to say the least – after all, could you possibly find a use for a program which enables you to plot the flow of air across a cross section of an aircraft's wing? How about a 3D molecular modelling program? No? What about a fractal music creator? Most of them are pretty useless, but you never know when they'll come in handy!

TREASURE TROVE

PD isn't just about obscure utilities though. Take a look through any half-decent library and you'll find an Aladdin's Cave filled with useful applications and utilities ranging from word processors, databases and spreadsheets to communi-cations packages, Sound Tracker utilities, programming languages and even ray tracers. Bought commercially, many of these packages would set you back several hundred pounds, but they're all here within the PD libraries for little more than the price of a disk!

The one big problem which plagues all PD is the lack of packaging and – more importantly – a decent manual. While most programs include some form of text file that gives you an overview of the program's capabilities, very few PD programmers have the time or the inclination to produce anything to rival the kind of thorough treatment that commercial manual writers give an application. If you can live without a manual that assumes you've only got two brain cells though, most PD applications are pretty simple to understand.



Workbench 2.0 has done more to improve the quality of Amiga PD than any other event in Amiga history. Why? – it's set a standard for 'look and feel'

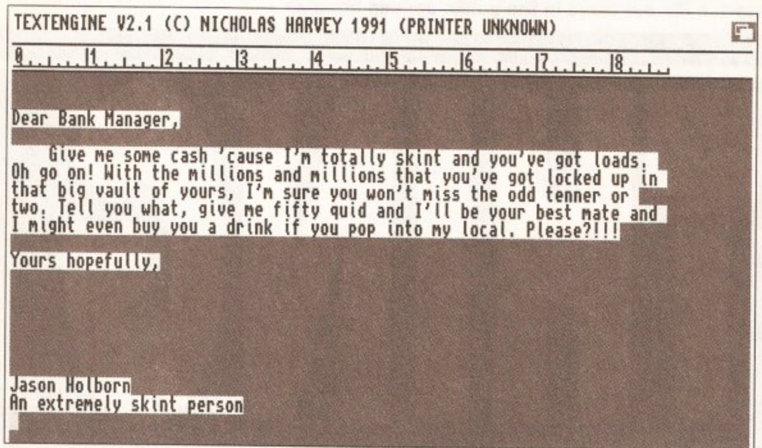
ACID TEST

Everyone knows that PD software is generally good stuff, but we thought we'd take things one step further to find out just how good 'good' is. With this in mind, we've decided to put the software to the ultimate test – PD versus commercial. PD programmers and software vendors will probably be bombarding us with hate mail for the next couple of months or so, but we don't care. We want to bring you the naked and possibly painful truth. If the results prove positive for PD programs, you may never need to splash out on a commercial package again!

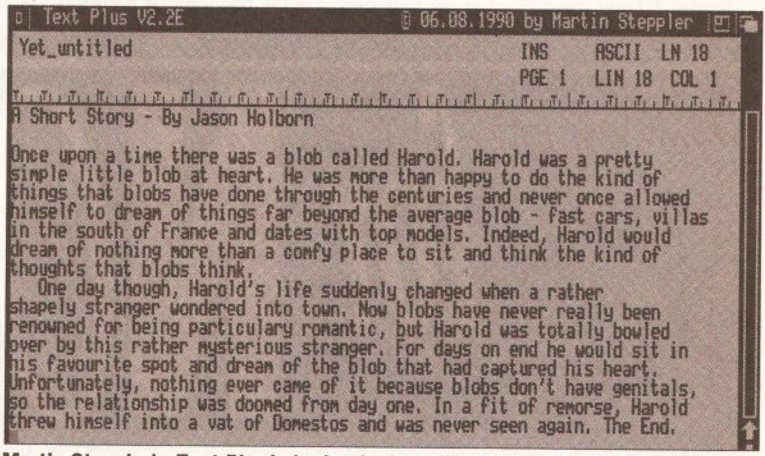
In the end though, the moral of this story is simple. If you're the kind of person who dismisses PD software on the grounds that anything which is free can't be any good, then you're really missing out on something pretty special. If you can fight your way through the endless scrolly demos and naff utilities, then you'll find a wealth of quality software that won't break the bank. By simply reading the *Amiga Shopper* PD section every month, we'll help you sort the wheat from the chaff. So, why not give PD a try?

BUSINESS SOFTWARE

Whether you need to process words or keep track of names and addresses, the PD libraries have plenty on offer...



For very simple letters and memos, *Text Engine* is ideal



Martin Steppler's *Text Plus* is by far the best PD word processor available

Everyone knows that the Amiga excels in creative computing – pixel painting, ray tracing and music are only a small selection of the many creative applications which are possible on the Amiga – but everyone needs to get back to basics occasionally. Databases and word processors may not be the kind of packages to inspire much enthusiasm, but there's no doubt that they're jolly useful.

Buying just one of these packages can be hard enough on the pocket as it is, but things can become almost unbearable if you need both. With an average word processor costing upwards of £80 and databases costing a similarly choking amount, it's nice to know there are PD alternatives. But how well do they perform? Let's find out.

WORD PROCESSORS

Searching for a word processor in the PD libraries can be a frustrating affair. Sure, there are plenty of programs which sound as if they might be word processors, but on judgement day very few live up to expectations. The main problem is that many PD programmers don't realise the differences between a word processor and a text editor.

To clarify the situation, let's take two packages – *MicroEmacs* (a text editor bundled with Workbench 1.3 and 2.0) and *Protext 5*. If you've used both, you'll already appreciate the differences. For starters, text editors don't treat paragraphs as one continuous block of text. Instead, they'll try to split each line within the paragraph with a carriage return. So what? I hear you ask. Well, if you then delete a couple of words from the first line of a paragraph and then attempt to reformat it, most text editors will just look at you dumbly and leave you with an enormous gap.

A word processor, on the other hand, is a pretty intelligent beast. It knows all too well that paragraphs shouldn't be split into individual lines and will reformat a paragraph if words or individual characters are deleted. If your PD word processor doesn't do this, then it isn't a word processor and is pretty worthless for heavy document processing.

So, what other features should you be looking for in a PD word processor? Well, a good selection of block manipulation tools are a definite plus if you're the kind of person who likes to move paragraphs around half way through a document and you'll probably miss the good old search and replace if it's not there. A spell checker isn't necessary, but it is worth looking for. Anyway, let's see just what's available.

TEXT ENGINE

Digitz Disk Util 277

If you're the kind of person who likes pretty user interfaces and your letter writing requirements are pretty basic, *Text Engine* may well be the program for you. The program has a very nice user interface with a page ruler and a strip of icons which run along the left hand side of the editor screen.

As far as editing features go, *Text Engine* is by no means serious competition for *Protext*. To call it basic would be an understatement – although you can carry out most of the usual features you'd expect from a word processor including the obligatory insert and deletion, copying and pasting of blocks etc, there's no search and replace or justification (well, apart from a 'centre line' option). *Text Engine* also suffers from the old paragraph reformatting problem that I highlighted above, making it somewhat less useful for professional writers like myself.

I get the general impression that the programmer gave up trying to make *Text Engine* a word processor and concentrated on making it an exercise in user interface design. It's a shame really – a bit more effort could have made *Text Engine* a great little program. As it is, it's really no better than an average text editor.

TEXT PLUS

PDSoft Disk 261

Text Plus is a PD word processor which could be the answer to every PD prospector's dreams.

Unlike *Text Engine*, author Martin Steppler doesn't like to waste time messing around with fancy user interfaces. There's not a single multicoloured icon in sight – in fact, there's not a single colour other than a rather bland grey and black in sight. Aesthetically it stinks, but then looks aren't everything.

What certainly doesn't stink are Text Plus' editing features. From the first time you use *Text Plus* you soon realise that the program isn't just a text editor trying to be a word processor – author Martin Steppler

PD VERSUS COMMERCIAL

To be perfectly honest, the standards of PD word processors don't really approach those of their commercial cousins, especially if you compare them to a market leading product such as Arnor's *Protext 5.5*. That said, most people don't need the speed and power of *Protext*, so something like *Text Plus* should prove to be more than adequate.

One thing that all the PD word processors that I checked out lack is a spell checker. If you need such a facility, then check out *Super Spell* on Fish Disk 583. It runs in the background and will automatically check the spelling of any words that you type within any application (even *Protext*). In many ways, it's an ideal companion product to programs like *Text Plus*.

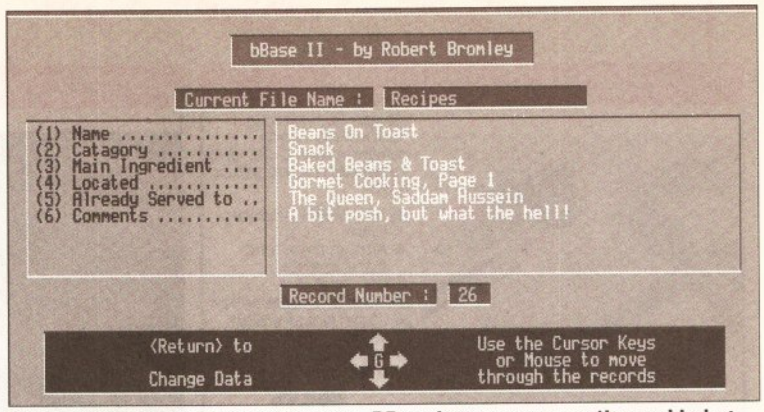
has put a great deal of effort into making *Text Plus* a very capable text processor. All the usual editing features are there including a vast range of extras which you wouldn't expect to find in a PD word processor – justification, mouse-based block marking, search and replace facilities and much more. All these operations are carried out at a very impressive speed even with larger documents.

Although by no means perfect, but it's a stable and usable system which should appeal to most. As long as you don't expect it to handle your follow up to *War and Peace,Text Plus* will prove a worthwhile investment.

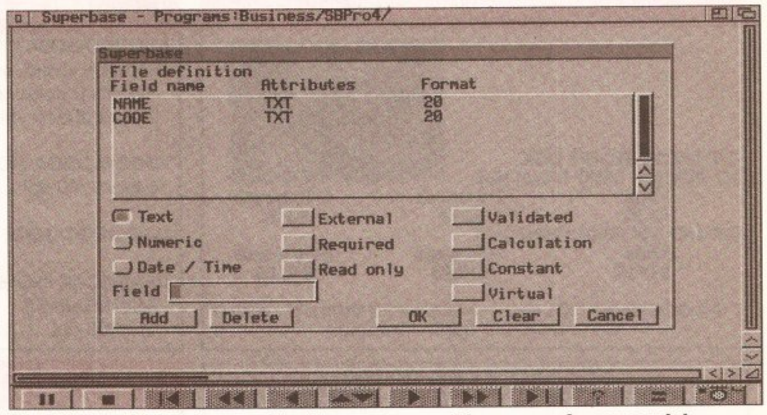
DATABASES

A good database can be a worthwhile investment if you need to keep track of large amounts of information – personnel data, names and addresses and perhaps a database of all your favourite *Amiga Shopper* articles. While you're unlikely to find a *SuperBase Professional* killer among the endless utilities and demos, there are plenty PD data-bases for those with modest needs.

The majority of PD databases are based around the age-old card file system made famous by programs such as *InfoFile* and *SuperBase Personal*. Each record is assigned its own 'card' which can be sorted and searched through just like the tacky plastic card file boxes from WH Smiths. Obviously a computerised card file system is more flexible than a manual card file. There's no limit to the number of cards that a single database can contain. As long as you've got enough storage space and a suitably large amount of RAM, you'll never have to pop down to 'Smiths for a refill pack!



For organising names and addresses, *BBase* is a program worth considering



Virtually no PD databases offer the programmable power of commercial packages such as Precision's *SuperBase Professional 4*

BEST OF THE REST

• PD WORD PROCESSORS •

EDWORD
George Thompson Services

Billed as a programmer's text editor, *Edword* is useful for basic word processing tasks such as simple letters and memos.

WORDY
Deja Vu Software

Written using AMOS, *Wordy* is probably one of the worst PD word processors you're likely to encounter. Very slow screen update and a lousy set of editing functions make this a program to steer well clear of.

UEDIT
17 Bit Software

UEdit is another text editor to include a couple of features which make it just as useful for word processing. Works beautifully under Workbench 1.3, but absolutely hates 2.0!

• PD DATABASES •

AMIBASE PROFESSIONAL III
AmigaNuts United

Another AMOS database, *AmiBase III* is very similar in design to both the *AMOS Database* and *Bbase* but it's let down somewhat by its rather quirky user interface.

QUICKBASE
17 Bit Software

Restricted to names and addresses only, *QuickBase* is a simple yet effective database that will generate address labels.

DIGITAL ADDRESS BOOK
Deja Vu Software

As the name suggests, the *Digital Address Book* is a mini-database geared towards the task of handling names and addresses. Does the job fairly well, but is let down by its lousy (low resolution) front end.

FLEXIBASE
Crazy Joes

FlexiBase is a very small (just 30K!) but very capable card-file database which is both fast and easy to use. For simple database applications, this is one program well worth checking out.

BBASE II
Fish Disk 609

Not to be confused with *dBASE II* (a far more powerful PC database), *BBase II* is a simple card file database written using HiSoft BASIC. Two versions of the program are supplied – one for those of you with 1Mb RAM or more and a second version for Amigas that still only have 512K RAM (do such machines still exist?). If you run the 512K version, you're restricted to a maximum database size of 50K – hardly enough for the simplest of databases – not surprising when the program eats up over 300K itself!

BBase is no competition for high level database programs like *SuperBase*. For starters, even when running the program on a machine equipped with the maximum of 10Mb RAM, *BBase* files are restricted to 600 records or a maximum file size of 100K (depending on which comes first). A bit limiting, to say the least!

Another limitation of *BBase* is the format of its databases. For some reason known only to the programmer, *BBase* files are restricted to a maximum of 9 fields. What's more, the program gives you no control over the format of these fields – strings are all that are on offer here, I'm afraid! Limitations aside, it's ideal for small databases such as names and addresses etc.

Where *BBase* really scores, is in the database manipulation. Of course you can add, edit and delete records, but you can also display the entire database (or a filtered list) a screenful at a time, print mail labels, sort the database on any field and search for individual records quickly.

AMOS DATABASE 3.01
Deja Vu PD

AMOS databases are ten a penny, but finding a decent one can be tricky. However, this new kid on the block looks set to establish itself as the number one PD database. And, it's written in AMOS, proving again what a fine language it is.

What first grabs you about the *AMOS Database* is its beautifully designed user interface which owes much to*Scala*, the acclaimed commercial video titler. The screens in *AMOS Database* were designed with *DPaint* and ported straight in as IFF files. All this adds up to a program that is a pleasure to use.

All the usual database functions are there, including full record control, sorting, searching plus an extra feature which you'd normally only expect in commercial programs like *SuperBase* – pictures. Yep, if words aren't enough, you can call on picture fields, enabling you to build up databases with text and images.

At the end of the day, the *AMOS Database* is only a card file system. There's no *SuperBase* -like programming language and relational databases are out of the question. However, for simple applications, you'd be pushed to find a similar commercial databse offering much more than the AMOS database.

WHY 316?

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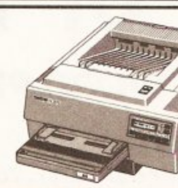
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PD CREATIVITY

Jason Holborn surveys the range of PD options which are available to for the more artistic user

Any computer can process words and juggle facts and figures, but only the Amiga can be used to write music, paint pictures and create realistic ray-traced images with nothing more than a mouse and good ideas. What's more, the Amiga PD libraries are packed with tools to help you become more creative. If you're a potential Picasso or musing on Mozart, there's something on offer.

In many cases, the standards of PD creativity match and even better those of commercial software. Take Teijo Kinnunen's *MED* music editor, for example. Commercial software vendors have tried to produce music composition packages based around the Amiga's sound capabilities, but *MED* still reins supreme.

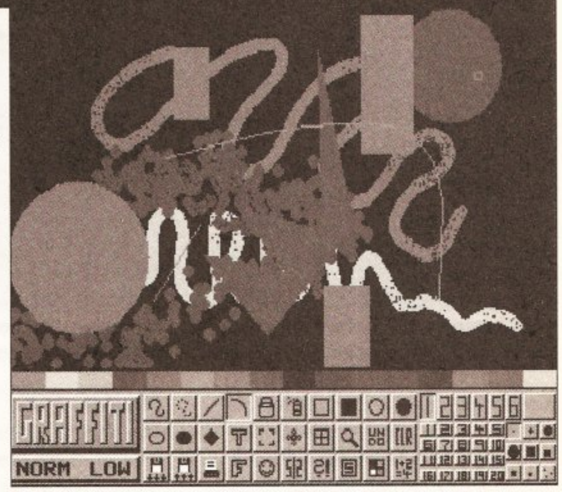
PIXEL PAINTING

DPaint's dominance of the paint package market has had a marked effect on the availability of PD paint packages. These days, with *DPaint* being bundled with virtually every Amiga system sold, few Amiga users need to buy a paint package. There are, however, those who bought their Amigas before the marketing boffins had the great idea of bundling *DPaint*, so it's nice to know that a few PD paint packages are available.

One of the best is *Graffiti* (Fish Disk 620), a paint package written using Europress' AMOS, a language that has a lot to answer for in the PD market. *Graffitti* is a conventional art package that works in a number of screen resolutions – the usual low, medium and high resolution modes including HAM and half-brite. *Graffiti* can read and write IFF ILBM files, so it's ideal for touching up artwork.

Features wise, *Graffiti* is pretty well endowed. There's all the usual freehand, line, box and circle functions, bezier curves, screen flipping and full *DPaint*-like brush manipulation facilities. And, because many of these functions are written in assembly language and bypass even AMOS's fairly speedy command set, they're performed at a rate which even *DPaint* would be proud of.

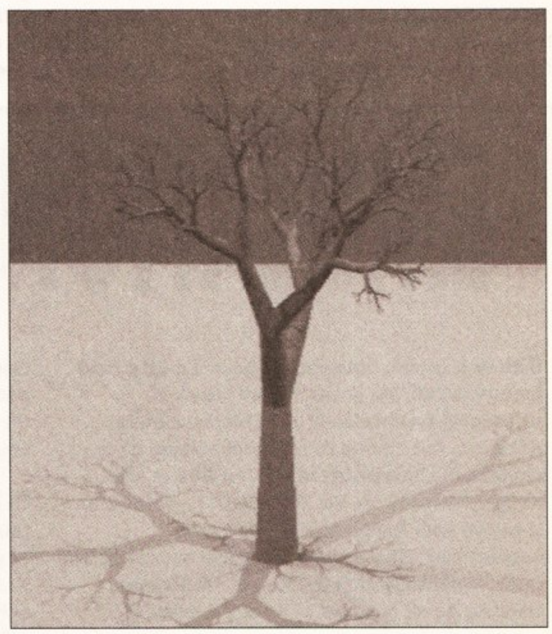
Graffiti takes some getting used to, but there's no doubt that it's a very capable system which could give earlier releases of *DPaint* a run for their money. It's by no means a *DPaint* killer, but even commercial software has yet to remove *DPaint* from its throne. If *DPaint* is still out of your reach, *Graffiti* is a good substitute.



***DPaint* it may not be, but *Graffiti* is still a damned fine PD paint package**

RAY TRACING

Many top Amiga ray tracing packages started life in the PD libraries including *Sculpt 4D* and *C-Light*, so it's always worth taking a look at what the PD libraries have to offer before splashing out on an expensive commercial ray tracer. Obviously you're not going to find a package with the ease of use of something like *Sculpt* or *Real3D*, but several very powerful ray tracers are available for little more than the price of a disk. In terms of features, PD ray tracers can give commercial rivals a run for their money.



Images of this quality and better are easily obtainable from *RayShade*, the PD ray tracing program

Take *RayShade* on Fish disk 596. Ported across from powerful Unix-based systems, *RayShade* reads a script file and generates realistic ray traced images at lightening speed. Version 3.0, supports nine types of primitives including box, cone, cylinder, sphere, flat and phong-shade triangles. To light your scenes, *RayShade* supports three light sources – point, directional and extended area. It also supports bump mapping, something that the producers of *Real3D* would have you believe is a feature unique in the Amiga market.

As you can see from the image directly above, the quality of images that *RayShade* produces are pretty impressive. Although the program doesn't support IFF24, its RLE-format files can be converted to IFF using the PD image processing program HAMLab on Fish 446.

Another fine PD ray tracing program is *RayDance*, a fully

BEST OF THE REST

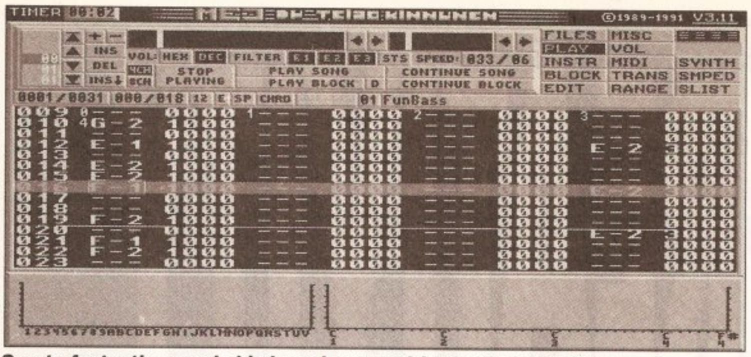
ANIMBRIDGE
17Bit Disk 1221
Convert animation files from a variety of packages to ANIM-5 format.

IMAGELAB
Ed Lib
Not quite *Art Department Pro*, *ImageLab* is still a very capable PD image processing program.

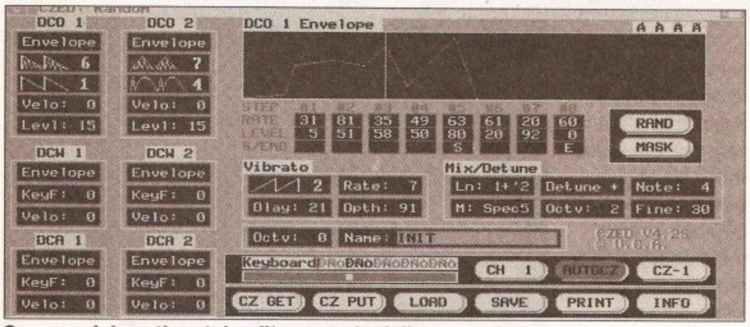
3D OBJECT EDITOR
Fish Disk 608
Experiment with 3D graphics with this high speed 3D object editor. The 3D editor allows you to spin and rotate objects in real time.

VIDEOLAB
Deja Vu
Produce horizontally or vertically scrolling titles in a variety of different typefaces using this PD video titling package.

GRAPHICS UTILS
17Bit 1237
Convert ST pictures to Amiga format, search for pictures, design sprites – all this and more can be achieved with this selection of graphics-related utilities.



Create fantastic sound ship-based compositions with Teijo Kinnunen's brilliant *MED* music editor



Commercial synth patch editors can be jolly expensive, so it's nice to know that several are available within the PD libraries, one example being *CZED*

functioning demo of the commercial program of the same name. Unlike *RayShade*, *RayDance* can write out files in IFF24 format. Indeed, the only difference between the PD version and the full package is that no printed manual is included and you have to press a 'Continue' gadget every 8 minutes during rendering.

MUSIC FOR THE MASSES

The Amiga PD libraries excel in the area of music creation. Although there's not an awful lot of PD MIDI software, if you want to create music using the Amiga's built-in sound chip, then you're spoilt for choice.

Possibly the best sound chip sequencer for the Amiga is in fact a PD product. Teijo Kinnunen's *MED* 3.11 (from AmigaNuts United) has since been turned into an 8-voice commercial release, but the original *MED* is still available for the price of a disk. Based around the Sound Tracker pattern-based sequencing system, *MED* allows you to produce complex tunes using Amiga samples and synthesised instruments. For those of you without samplers, *MED* comes with a comprehensive selection of samples covering drums, bass sounds and lead instruments.

It's rare to find a PD program which matches its commercial rivals, and rarer still to find a program that betters them, but *MED* is one such program. If you only buy one piece of PD software, then it has to be *MED*. Put simply, *MED* is one of the true PD bargains. Miss it at your peril!

MIDI MARVEL

MIDI compatible PD software is still thin on the ground, but some useful software is around if you look hard enough. So far, no MIDI sequencers are available, but the PD libraries have plenty to offer synth owners in the form of patch editors. With commercial versions costing around £100, these PD versions are a must.

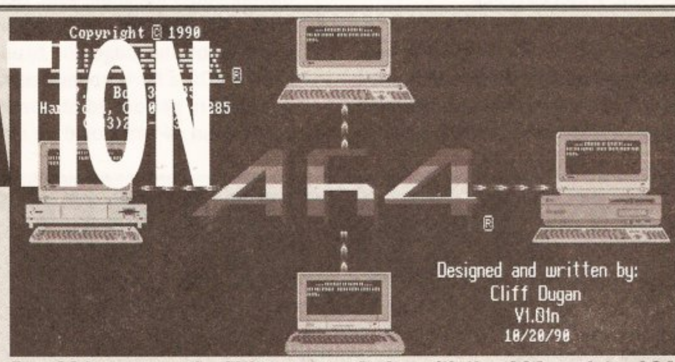
Path editors are available for four different makes of synthesiser – Yamaha 4-operator synths, the Kawaii K1 and the Casio CZ series. For Yamaha owners, issue 5 of the PD disk-based music magazine *AM/FM* (from AmigaNuts) is a must. It contains *two* separate patch editors – one for the FB-01 and another for Yamaha's TX81z (and DX11) module. Both programs can also be used as a librarian, allowing you to sort your favourite sounds into a bank which can be transmitted to your synth for immediate use.

For Casio owners, Fish disk 223 is the disk to go for; this contains a program called *CZED* which used to be sold as a commercial package. As a result, it's as good as many commercial patch editors and will enable you to edit sounds on a range of Casio CZ synths including the CZ230S, CZ1000, 2000 and 3000.

Finally, Kawaii K1 owners should have Fish 332 at the top of their shopping list. Again, the K1 Editor can edit and organise sounds. One nice feature of all three editors is a 'Randomise' function which attempts to automate the creation of sounds by setting synth parameters to random values. The results aren't always great, but an occasional great sound always crops up.

Programmers who wish to write MIDI-based applications should also check out Fish disk 227, which contains a library with all the routines you need to handle MIDI protocols. It can be addressed from a number of languages including Assembler, C, Modula-2 and BASIC. Full instructions are included along with the necessary Include files.

EMULATION SENSATION



Run C64 games and utilities on your Amiga with the *A64* emulator A64

Believe it or not, but your Amiga is a pretty good impressionist. OK, it can't quite handle a convincing impression of John Major or Paddy Ashdown, but I'd like to see Bobby Davro do a respectable impression of a PC, a C64 or the Amiga's closest cousin, the Atari ST. Well, believe it or not, your Amiga *can* handle these impressions. What's more, all these emulators are freely available within the Amiga PD libraries. Here's a quick rundown of what's available.

ST EMULATOR

Digitz Disk Util149

If there's one way to annoy an ST owner, it must be this program. Recently translated to English, the PD ST Emulator is a brave attempt at a software-based emulator that will allow you to run many ST titles on your Amiga. It supports three of the ST's screen resolutions including its much vaunted monochrome high res mode, making it ideal for ST applications such as *Calamus* and *Timeworks* DTP.

The emulator runs at a very respectable speed, especially when working in high resolution. However, as the resolution drops, so does the screen update speed. When running in the ST's 16-colour low res mode, screen update is reduced to a crawl. On the whole though, the standard of emulation is very good indeed.

IBEM

Office Choice PD

Several PD PC emulators have attempted to turn your Amiga into a usable PC, but *IBEM* is about the only program which comes close. When used with *MessyDOS*, the PD MSDOS filing system, *IBEM* can read and write 720K PC-format diskettes. The emulator supports a number of PC screen modes including MGA and CGA.

The speed of execution isn't that bad, compared to Commodore's *Transformer* which was dropped after the release of emulators such as the ATonce and KCS board. That said, *IBEM* is still slow, especially when compared to its hardware-based commercial rivals. For the occasional PC program though, *IBEM* is worth checking out.

A64

17Bit Disk 1139

In contrast to *IBEM* comes *A64*, a very usable PD C64 emulator that is actually a lot better than its commercial rivals.

Although *A64* is not strictly a PD product, the software itself is completely free. There's one big catch though – in order to be able to transfer C64 software to the emulator, you are required to pay a $30 shareware fee which rewards you with a hardware-based adaptor. This will enable you to connect up and use Commodore's 1541 or 1571 disk drives (or perhaps that should be snail drives?).

In operation, *A64* is actually very capable indeed. Unlike most emulators, it has been especially written to handle C64 games including those that included nasty raster tricks. Although the games themselves appear to run more slowly than a real C64, they remain quite playable.

For ex-C64 owners everywhere, *A64* the C64 emulator is a must.

UTILITIES UNLIMITED

One area of computing in which PD libraries excel is utilities. Jason Holborn surveys what's available

When you start looking for programs such as word processors and databases, the PD libraries are up against some stiff competition from commercial software vendors. But try to find a commercial package that doesn't quite fit into a neat pigeon hole and your only option is to scour the PD libraries.

Commercial vendors aren't going to spend months developing a utility which may only be of use to a few users, but PD is different. Some of the utilities you'll encounter may seem useless to you, but you can bet there's someone out there who will be glad to get hold of it.

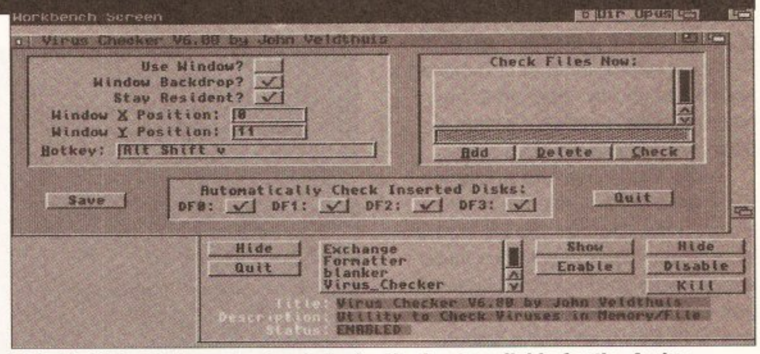
That's not to say that all PD utilities are of use to only a few users. They most certainly exist, but look hard enough and you'll find some real gems that are as good, if not better than similar commercial tools. Take Timm Martin's *SID* directory utility, up until the recent release of INOVAtronics' *Directory Opus*, *SID* was the number one directory utility. Commercial vendors tried to match it with programs like Progressive Peripherals' *DiskMaster 2*, but nothing even came close. With the impending release of *SID 2*, Timm Martin's acclaimed directory utility could well re-establish itself as the Amiga number one. Let's take a look at just what's available.

DOS CONVERTERS

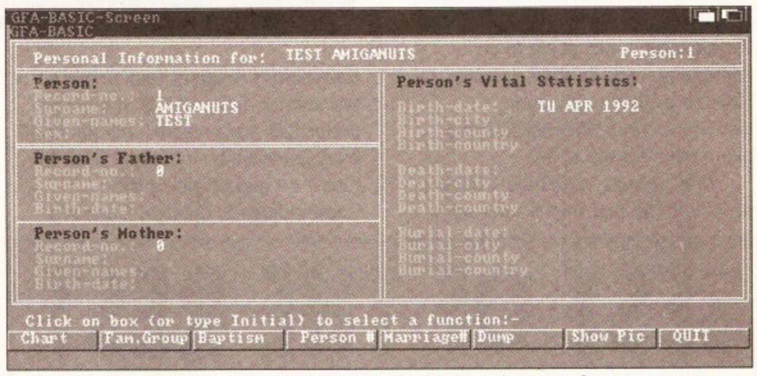
Commodore is rumoured to be planning to build direct support for MSDOS-format diskettes into the next release of the Amiga OS, allowing you to read and write PC disks from within Amiga drives. In the meantime, you'll need a commercial program like *CrossDOS* or *DOS-2-DOS* to achieve the same results.

The PD libraries have something to offer here too in the shape of *MessyDOS* (17Bit Disk 1221), a device driver which works similarly to *CrossDOS*. Like *CrossDOS*, *MessyDOS* installs into the Amiga operating system and adds an extra device name for each floppy drive connected to your system – MS0: for the internal drive, MS1: for DF1: etc. Once installed, any application that runs through Exec (the Amiga's operating system) will be able to read and write PC disks by referring to the drive that the disks has been placed into by its relevant *MessyDOS* device name. If you then remove the PC disk and place an Amiga disk in the drive, AmigaDOS will sense the change and treat the disk normally.

What we have here is a PD program which does everything its commercial rivals can, but with an acceptable price tag. In this case you can forget about commercial programs such as *CrossDOS* and get *MessyDOS* instead.



John VeldThuis' virus checker is by far the best available for the Amiga



Trace your family roots with *A-Gene*, the Amiga's only genealogy program

PROTECT AND SURVIVE

Viruses aren't such a concern these days, but it's still worth being prepared. Software vendors such as CRL tried to dip their toes into the lucrative virus killer market a couple

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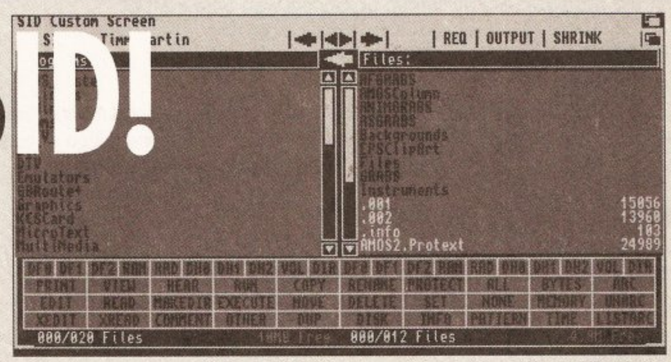
TELL SID!

A directory utility can be handy if your understanding of the Amiga's command line interface (CLI) isn't up to scratch. Designed as a bridge between AmigaDOS and the Workbench environment, directory utilities enable you to carry out tasks such as formatting disks, copying, deleting and renaming files, creating directories etc. Even hardened AmigaDOS hackers will find a directory utility useful, because they enable you to carry out CLI operations at a much faster rate than would be possible from the Shell.

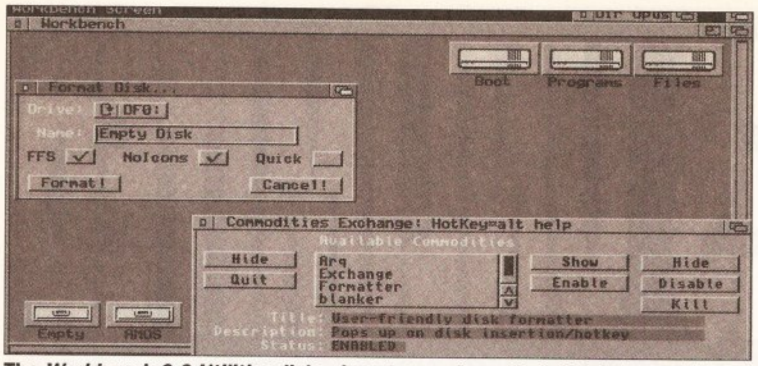
Undoubtedly the best directory utility is Timm Martin's *SID* (Fish 338). *SID* uses the split screen approach, assigning one half of the screen to a source device or directory and the other half to the destination for copying operations. Along the bottom of the screen are a gadgets containing commonly used AmigaDOS operations such as COPY, DELETE, RENAME etc, plus a few more obscure (and customisable) operations such as archiving, date-stamping etc. All in all, a comprehensive coverage of the AmigaDOS command set.

Operations are carried out by clicking on the files you wish to manipulate. You can configure *SID* to run in its own custom screen with its own colour palette which makes the program look more usable under 2.0. Unlike *Opus*, *SID* doesn't come with its own configuration program, so its config file has to be edited manually in a text processor.

These days, *SID* is starting to show its age – *Opus* is a far more powerful. INOVAtronics has been able to learn form *SID*'s mistakes, so *SID* was unlikely to maintain its throne as the ultimate directory utility. *SID* is capable enough, although more advanced users may still want *Opus*, but check out both before you buying.



If AmigaDOS is beyond you, then Timm Martin's *SID* is a definite must



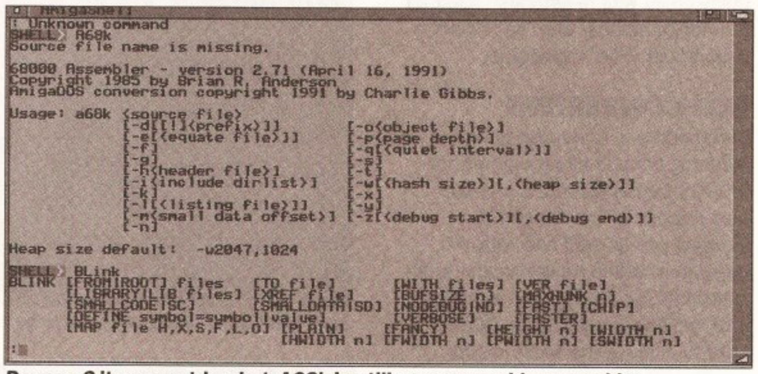
The *Workbench 2.0 Utilities* disk – insert an unformatted disk into any drive and the pop up formatter will ask you whether you wish to format it

of years back, but the abundance of free virus killers within the PD market soon killed off any hopes that they had of making money out of the panic surrounding the virus scare.

Many virus killers are available, but three programs rule the roost – *VirusX*, *Virus Checker* and the *Master Virus Killer*. *VirusX* is still the choice among many developers because it was one of the first to be developed and its programmer, Steve Tibbet, kindly supplies the source code to his program so that concerned users can check through to make sure that *VirusX* itself is not going to do something nasty to their system. More recently though, John VeldThuis' *Virus Checker 6.0* has taken over the top spot.

What makes VeldThuis' checker special is the fact that it runs as a transparent resident task under both Workbench 1.3 and 2.0. If invoked under 2.0, the program installs itself as a Commodity, making it easy to turn it on and off using the Commodities Exchange. Once it's running though, *Virus Checker* will check all disks that are inserted into any drives connected to your system. This is my personal favourite and it's performed faultlessly in the year or so that it has lived on my hard drive.

Another virus checker worth checking out (no pun intended) is the *Master Virus Checker 2* (AmigaNuts Disk 971). It doesn't run in the background like *Virus Checker*, but it's a very pretty and friendly program to use. I've never really be a great fan of MVK, but many users prefer it to the other programs that I've highlighted.



***Devpac 3* it may not be, but *A68k* is still a very capable assembler**

FAMILY TREE

The one great thing about PD software is that there are many utilities and applications available which just aren't available commercially. One such utility is AmigaNuts' *A-Gene*, a genealogy program which will enable you to trace your ancestors by building up a family tree.

A-Gene is basically a glorified database which has been optimised to make the task of sussing out your roots that bit simpler. Running from within its own friendly Intuition-based front end, *A-Gene* allows you to build up a massive database of individuals and then link them through marriages. Each individual is fed into *A-Gene* as a separate record which is then cross-referenced within other records by specifying which records contain the details of the individual's mother and father. Once all the data is fed in, you can query it in basically the same way as you can within a 'proper' database.

What makes *A-Gene* so special though is its tree function. Simply by telling *A-Gene* who is to be at the root of the tree, the program then displays a family tree showing the individual's children, their children's children and so on.

A-Gene has a few annoying quirks, but on the whole it's a solid and well written piece of software which is well worth obtaining. Commercial software vendors have been very slow to come up with a 'real' genealogy program, so it's nice to see that the PD libraries can come up with the goods.

2.0 GOOD REASONS

The PD libraries already have plenty to offer users with Workbench 2.0. PD programmers have been quick to jump on the 2.0 bandwagon and the result is some fine software for 2.0-based Amigas. These range from comms packages and fractal generators to utilities which enhance 2.0 including extra AmigaDOS commands, commodities and replacements for many 2.0 tools.

If you've got 2.0, try the *Workbench 2.0 Utilities* disk from George Thompson Services. It contains a vast range of utilities including a smashing disk formatter. As runs in the background as a resident task, every time you insert an unformatted disk into the drives, the formatter pops up and asks you if you want to format it. Sounds simple, but it's the first time I've seen this feature on the Amiga.

CHEAP PROGRAMMING

If the PD libraries don't contain the program which you require, you could try your hand at writing your own using one of the many freely distributable programming languages. Although many lack the more aesthetic features which make a commercial language marketable, the overall standards of their implementation is second to none.

For assembly language programmers there's *A68k* (Fish Disk 592), a macro 68000 assembler. It covers the Motorola command set and can be used to produce freely distributable software including games and utilities for the price of a disk. Although it is bundled with all the utilities you need to produce stand-alone code (including the industry standard linker, BLink), *A68k* (and indeed all PD programming languages) doesn't come with the Commodore 'Include' files as they remain under copyright. You can get around this by buying them from Commodore or by using library base offsets (techies will understand what I'm talking about!).

For C and Pascal programmers, there's *DICE* (Fish 359), *NorthC* (Fish 353) and *Pascal* (Fish 339). All three support the full instruction set of their languages, making them a viable alternative to the commercial competitors. Search hard and you'll also find PD implementations of Logo, Forth and even more obscure languages such as LISP. AS

For a comprehensive list of public domain houses, where you can get hold of the PD mentioned in this feature, turn to page 156. Don't miss our PD product locator on page 160 for even more information.

BEST OF THE REST

TETRACOPY
Crazy Joes Disk 1234

If you've ever had to copy more than a couple of disks, then you'll know all too well just how boring it can be. With *TetraCopy* however, you can play a game of Tetris whilst disks are copying.

SCREENMOD
TBag Disk 58

Alter the attributes of any screen or window with *ScreenMOD*.

VSCREEN
Fish Disk 494

If you've ever drooled over your friend's Super HiRes-equipped Amiga, then *vScreen* is the answer. Although it does not increase the resolution of your Amiga, it increases the Workbench's size to a scrollable 1280 by 1024.

BREF
Fish Disk 494

BRef is a very handy utility for both HiSoft and AmigaBASIC users. It will produce a cross referenced listing of any BASIC source code sent to it.

RUNME
AmigaNuts 1186

Run any program from the Workbench without ever having to flick through endless windows and icons. Ideal for hard disk users.

PICSAVER
TBAG 56

Grab screens in IFF format from any program that runs under Intuition. *PicSaver* is ideal for grabbing graphics from Intuition-based programs.

PostScript is nothing more than a dream for most of us. But with the help of a nifty PD program you can have PostScript print quality no matter which printer you own. Nial Grimes investigates the bargain of the century

PostHaste

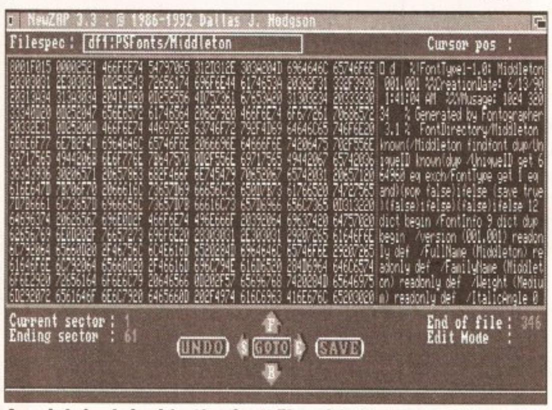
Desktop publishing is the boom industry of the nineties and it's thanks to high power, yet low cost computers like the Amiga that it's become affordable for the man in the street. The Amiga is well served by excellent DTP packages such as *PageStream 2* and *Professional Page*, but still people insist on using lesser computers for their desktop publishing needs. This has led to a confusing mish mash of different standards, with only a single glimmer of hope – PostScript. The great thing is that PostScript quality is available at low cost in the public domain as *Post*. What follows is how you can get the print quality your Amiga deserves.

WHAT'S POSTSCRIPT?

PostScript is a programming language with one major difference – it is a typesetting language or 'page description language.'

PostScript has been around for several years, made popular by Apple building the technology into their top end LaserWriter printers. Most desktop publishers can be persuaded to output PostScript, the catch being you have to own an incredibly expensive Adobe or clone printer, typically costing over £1300!

Or rather, you used to! You've probably been pondering where your Amiga fits into this gloomy picture. *Post* is an Amiga software solution for a hardware problem. Overpriced, badged printers are a thing of the past, because *Post* can print PostScript files to any preference printer. *Post* is in effect a software PostScript printer. It understands all PostScript commands and translates them for use with any of the 'preference' printers!



A quick look inside the font file with *Newzap* will reveal all, including the important PostScript name

A DREAM COME TRUE?

As if that wasn't enough, you can still look your bank manager in the eyes because *Post* is completely free! However there is a small catch. In common with the majority of PD software, *Post* comes in an archive with accompanying instructions in PD instructionese – a problem?

In actual fact installing *Post* isn't as difficult as it looks. Providing you're fairly familiar with the basic CLI commands – or Workbench, in the case of the Plus – you shouldn't have any problems whatsoever.

Before you rush out and order a *Post* disk, you're going to want a few more things. Essentially you need to get hold of *Conman* – the replacement console handler and the Arp library – for its file requester.

SCALPEL PLEASE, NURSE

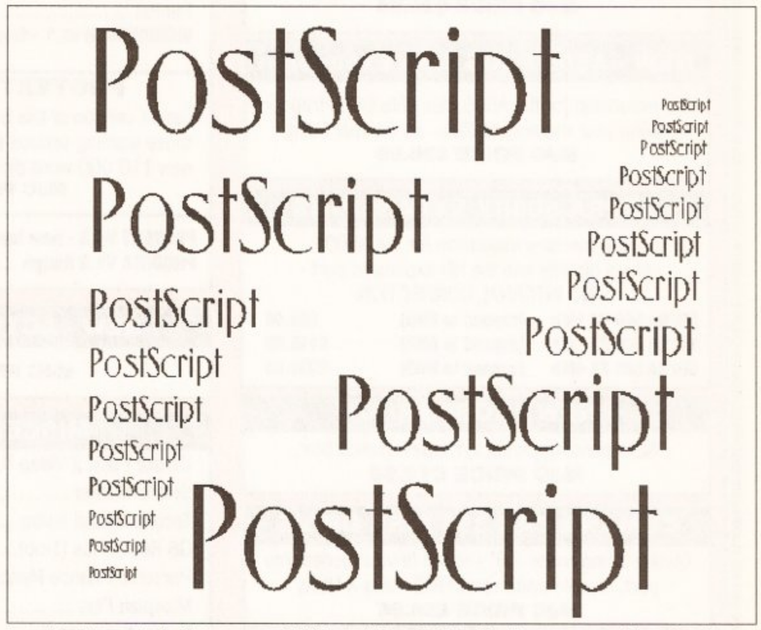
As always, it's best to work back from the Workbench disk (after all, why destroy all the work Commodore has lovingly put into creating a boot disk for you?). This is going to involve deleting a few files to make some room, so it's essential – *essential* – to use a backup of your original Workbench disk; you'll find details of this very operation in your manual.

Exactly what you need to delete will depend on your version of Workbench.

If you are using version 1.3 of Workbench, the following files can be deleted on a copy of your master disk using the CLI command DELETE. Make sure you zap the '.info' files as well as the files themselves – they take up needed space! The following can be safely discarded:

Fonts:diamond, Fonts:garnet, Fonts:sapphire, Fonts:opal, Fonts:emerald, Fonts:ruby,

continued on page 29



As a testament to the compatibility of *Post*, this display was produced using a *Timeworks* ST PostScript file

WHAT YOU NEED

Post needs a little bit of company on the disk. The following three disks are the bare essentials:

F518 – The *Post* disk itself – in other words, you won't get far without this.
F426 – *Conman*, the replacement console handler. *Post* relies on this for all console output – another must.
T031 – The ARP Library version 1.3 – used for the file requester.

You don't strictly need either of the following disks, but they will make life a little easier:

F484 – *Text Plus*. A text editor is really handy for tweaking those PostScript files; it needn't necessarily be *Text Plus*, but it's as good as any.
U252 – *Newzap* – for extracting all the PostScript names.

All the above disk numbers are taken from the NBS catalogue, but should be available from any good PD library for under a tenner. NBS live at: 1 Chain Lane, Newport, Isle of Wight, PO30 5QA. ☎ 0983 529594

continued from page 27

Fonts:diamond.font, Fonts:garnet.font, Fonts:sapphire.font, Fonts:opal.font, Fonts:emerald.font, Fonts:ruby.font, Utilities:Calculator, Prefs:Pointer, Devs:Narrator.device.

Finished? That's a great start.

Now, it's the turn of version 2.0 users. Remember that to install *Post*, we need about 250K of space on the Workbench disk. So, the following files can be deleted without problems – providing you are using a backup, obviously.

Deleting the files couldn't be easier. Simply open a window for the disk, select 'Show All', click on the file and choose 'Delete' from the icons menu. The following can be removed:

Utilities:Clock, Utilities:More, Utilities:Exchange, Utilities:Say, Prefs:Input, Prefs:IControl, Prefs:Palette, Prefs:WBPattern, Prefs:Pointer, Prefs:Screenmode, Prefs:Overscan, Prefs:Serial, Prefs:Time, Libs:Rexxsupport.library, Libs:Rexxsyslib.library, Devs:Narrator.device

Workbench 2.0 users can now go back to installing *Post* itself.

Hard drive owners will have been able to sit back and look smug through all this, because they have all the room they are likely to need. So, on with the show...

You should now all have approximately 250K of free space on your Workbench disk (you did use a copy didn't you!?) and are fully prepared to move on to the next stage.

COPY, COPY

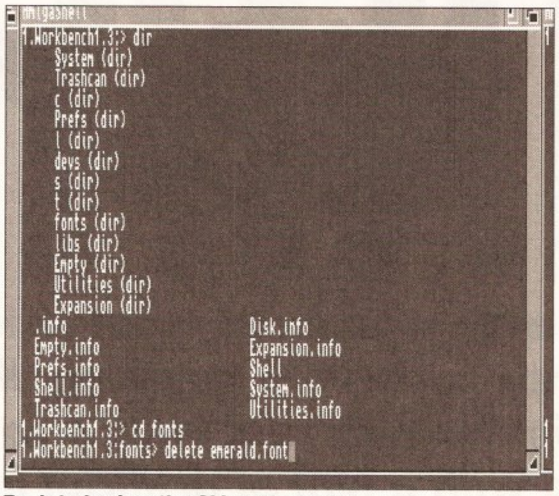
Right then, we're on to the installation at last! Reboot under your newly created disk and copy the following files: POST.LIBRARY & ARP.LIBRARY into the LIBS directory and POST, POSTLJ, INIT.PS & POSTBAND into the root directory.

Conman needs to be the default console handler before *Post* will even think about running. Installing *Conman* is simple enough – just run the installation script. Telling AmigaDOS that we want to use *Conman* is a little more tricky and involves adding a few lines to your startup-sequence.

To start editing type: ED S/STARTUP-SEQUENCE and the add the following lines before the LOADWB command (you can't miss it – it's sitting on line 20 using Workbench 1.3):

```
CONMAN -C
MOUNT CNC: FROM DEVS:CON- ↵
MOUNTLIST
ASSIGN PSFONTS:
POSTFONTS:PSFONTS
```

Plus users might like to put put these lines in a 'User-Startup' file. Under Workbench 2.0 you might also like to add DEFER to the end of the



Back to basics: the CLI method may be a bit laborious, but look on the bright side – you're improving your typing no end!

ASSIGN command – it's not essential; it just makes things that little bit easier.

The astute among you (or those of you who are still awake) will have noticed that we've mentioned a disk called POSTFONTS in the startup-sequence. This is where we are going to store all those snazzy vector PostScript fonts and is simply a disk named PostFonts, containing the PSFonts folder supplied with *Post*. Any PostScript files you need to print should also be stored on this disk.

> **"Post opens up a whole world of prospects for Amiga owners."**

WE HAVE LIFT OFF!

Believe it or not, you're there – *Post* is installed! Reboot your system, pop the disk in the drive and run the *Post* icon direct from the Workbench.

Was it worth the effort? Let's get something on the screen. Click 'OK' to remove the opening dialogue and select Interactive from the File menu – this is the PostScript equivalent of a Basic interpreter; you type the commands and the result appears on screen. Type:

```
/FunkyFont findfont 100 ↵
scalefont setfont
10 10 moveto (Hello World!) ↵
show
```

Providing the instructions have been followed, after a brief pause you should have a large, distinctly vector message standing before you. Remember that *Post* is case sensitive, so

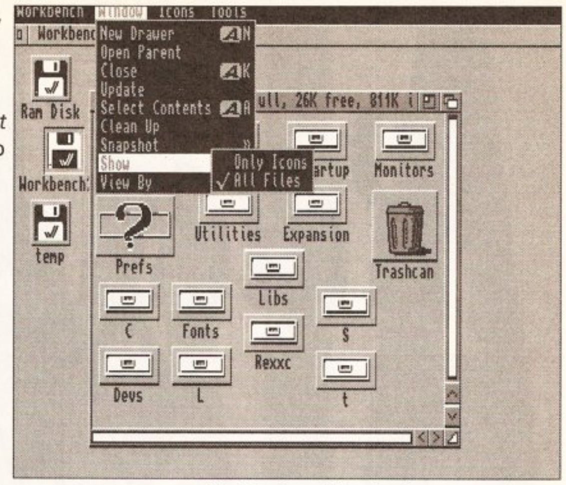
```
/FUNKYFONT ↵
FINDFONT 100 ↵
SCALEFONT ↵
SETFONT
```

, for example, would not work.

END CLI

Under test conditions *Post* has proved extremely reliable, as can be seen from the screen shots littered around the page. PostScript files work from virtually any machine including PC and ST. With a small knowledge of the PostScript language, even the trickier Macintosh files can be persuaded to run.

In fact, the single topic that is likely to cause the most trouble – that of memory – is not really *Post*'s fault at all. A full A4 page at 300dpi



Ah, the benefits of advancement – sorting out your boot disk under Workbench 2.0 is a doddle

occupies over a megabyte of memory! On a 1Mb machine with a reasonable font buffer you can expect to print to about 150dpi; the higher the quality, the more memory you need.

Post opens up a whole world of prospects for Amiga owners: Typesetting for profit, proofing PostScript documents or just printing files produced with Amiga DTP packages – after all, *Post* will churn out a page about three times faster than *Professional Page*! It's a testament to the Amiga's flexibility and a downright bargain. What more is there to say? – Get it! AS

JARGON BUSTING • JARGON BUSTING

PD instructionese – A minority dialect understood only by public domain programmers and the odd nuclear physicist.

Startup-sequence – The list of Shell commands your Amiga runs each time you boot. The startup sequence is found in the S directory.

Archiving – A method of compressing files, making huge savings on disk space at the cost of accessibility.

Installation – The process of setting up a piece of software to run on your computer system.

ARCHIVE AGGRAVATION

Nobody's disputing that archiving is a pretty impressive compression method. But when it comes to getting at the software contained, it can be off-putting.

Forget the reputation. Just copy LHARC and Post16b.lzh to a blank disk, pop the disk in the internal drive and type the following lines from the Shell:

```
df0:
lharc x df0:Post16b.lzh df0:
```

There we are, that wasn't so bad was it? This will extract all the files in the Post16b.lzh archive to the root directory of df0: – it really is that simple. The same method can be used to de-archive pretty much anything in the public domain (aren't we good to you?).

Rules of the road

If you've ever wondered what automated theorem proving has to do with anything, then stick around with Philip Gladwin and build a route finder using a PD Prolog with a hint of artificial intelligence

In the next two months I'm going to give you an insight to the basics of Prolog programming. I'm going to start with a quick introduction to the language itself and then go on to show you how easy it is to use by describing how you can put it together to form the framework for a real route finding system.

Prolog is a logic machine – officially an automated theorem prover. What this means is that unlike a lot of languages – AMOS for one – it has an extremely rigorous theoretical underpinning. This, I'm sure you'll be glad to know, I don't intend to go into. Life's just too short. If you really want to know what's going on around the back end then any book will give you the necessary – I'm here to tell you how to use the thing.

DETUNE YOUR BRAIN

To learn to program in Prolog you need to detune your mind a little. Forget your knowledge of Basic, C, Pascal, etc – it's not a matter of providing the clearest possible algorithm to solve a problem, more a matter of writing the clearest possible description of a problem. If you are able to write down your situation in a logically coherent form then you're made. You sit back and let Prolog repeatedly search the knowledge base until it deduces the solution.

You have to learn how to represent facts, and you have to learn how to write rules about these facts. A fact is something like "Alex is rich", or "Alex has a BMW". In Prolog you would write these facts as rich(alex) and owns(alex,bmw).

On the other hand, "If you own a BMW then you're rich" is a general statement, or rule. When this is translated into Prolog it looks like rich(X):- owns(X,bmw). This is read something like "IF you can prove that X owns a BMW, THEN you have proved that X is rich."

Of course, your code doesn't have to be "true", or "correct" – no_of_legs(4,X):- bird(X). is perfectly acceptable Prolog, even if it doesn't make much sense. (Note that variables always begin with an upper case character while constants always begin with a lower case character.)

Similarly, we can code the statement "Bob is Ron's parent" as the fact parent(bob,ron). If we have a few facts like this then we have enough to achieve simple deductions.

Think about family trees for a moment. For example, Bob is Ted's grandparent if Bob has a child, and that child is Ted's parent. Fairly straightforward, I think you'll agree. Now, put variables in instead of names, then we can generalise and translate it into a rule: grandparent(X,Z): parent(X,Y),parent(Y,Z).

This one says "If you can prove that X is the parent of Y, AND you can prove that Y is the parent of Z,

continued on page 27

FIRST THINGS FIRST

AI is all about getting the right tool for the job, and the tool you have to get this time is SBProlog. As far as I know this is the only version of Prolog for the Amiga, and it's public domain. It's on Fish Disk 140, so just about every PD Library should be able to help you out.

As soon as you get hold of it I reckon the first step has to be to print yourself a copy of the manual. It's written for people who already know Prolog, and is a bit of a tough read, but you're not going to get anywhere without it. I used *PPmore* to print it, and it came out beautifully formatted. One tip is to use Preferences to select "Fine" print quality, 80 characters to the line, and 6 lines to the inch – the manual is very long, and while this method of printing won't save you any paper it'll save you a lot of time, and give you a perfectly readable copy.

Figure 1: PREDICATE STRUCTURE
'ANCESTOR' KNOWLEDGE BASE + SAMPLE DIALOGUE

```
predicate (argument,argument,argument...)

KNOWLEDGE BASE
(Line:   1)     ancestor (A,D):–parent(A,D).
         (2)    ancestor (A,D):–parent(A,X),ancestor(X,D).

         (3)    parent (john,ron).
         (4)    parent(ron,cath).
         (5)    parent(cath,carol).

DIALOGUE
         (A)    USER:    l?–parent(ron,cath).
                PROLOG:  yes

         (B)    USER:    l?–parent(ron,carol).
                PROLOG:  no

         (C)    USER:    l?–ancestor(john,cath).
                PROLOG:  yes
```

> **"To learn how to program in Prolog, you need to detune your mind a little."**

••• ALL ABOUT PROLOG ON THE AMIGA •••

Prolog is an Amiga port of a Unix-based system developed by the Logic Programming Group at SUNY, Stony Brook. As with nearly all PD languages, it works exclusively from the Shell: installation is not for the faint hearted.

Documentation comes in the form of a text file. Most of this is taken up with descriptions of the peculiarities of the Stony Brook system and implementation details for use by the more adventurous programmer. A detailed knowledge of Prolog is assumed, so a book on the language could be useful.

The core of the system is a virtual machine interpreter written in C. This is a software simulation of a computer – it takes very simple instructions and interprets them as if it was a microprocessor dealing with machine code. The rest of the system is written in Prolog itself, but compiled into the pseudo-machine code which the virtual machine uses.

Users' programs may also be compiled into this machine code, making them run faster. Alternatively, programs may be kept as text files in the system's database, as is more normal, and interpreted by Prolog as necessary.

There are no direct facilities for writing programs within the system – an editor must be used to create and save a file. Rather than leaving the Prolog system to do this, it's possible to either make use of the Amiga's multi-tasking facilities or the Prolog command 'system', which enables the user to call operating commands such as 'Ed'. Once this is done, the file may either be read into the Prolog database for interpretation with the 'consult' command, or compiled with 'compile'.

Prolog usually operates in query mode, meaning that the user accesses relations in the database and is informed as to the truth or falsity of them according to the data passed to the relations. It is equivalent to calling procedures in a conventional language and is the only way to run programs.

For more on the intricacies of Prolog see our box on things to watch out for below.

continued from page 25

THEN you can say that X is Z's grandparent".

Sounds trivial? Of course it is. But there is power in this method. What about an even more general rule? What about the idea of ancestors? How would we state facts about X being some kind of ancestor of Y, like a grandparent, or a great-great-great grandparent? Well, the way to do it would be to try and imagine a family, where John is Ron's parent, Ron is Cath's parent, and Cath is Carol's parent. We can represent these facts in the knowledge base as follows:

```
parent(john,ron).
parent(ron,cath).
parent(cath,carol).
```

Now, two things you can truthfully say about ancestors are:

- "X is an ancestor of Y if X is a parent of Y."

and the following:

- "X is an ancestor of Y if X has a child, and that child is an ancestor of Y."

Brilliant, eh? And on the face of it somehow not very helpful. But this is where the clever stuff comes in. Look at what happens when these rules are coded up.

- ancestor(A,D):-parent(A,D).
- ancestor(A,D):- parent(A,X),ancestor(X,D).

The second rule uses the most powerful tool in the Prolog system's armoury – recursion.

Recursion is a notoriously hard concept to get your head round, but then again, once you've got it, you've got Prolog in the palm of your hands. A little diversion through some of the mechanics should help clarify things.

WHAT'S RECURSION?

When you load SBProlog up you are faced with the prompt:

```
| ?-
```

(User friendly? What's that?) Every time you type anything in at this prompt, Prolog treats it as a new fact that could be added to its knowledge base, and, crucially, tests that it is consistent with everything it knows at the moment.

Take a look at Figure 1 on page 25 for the knowledge base as it

continued on page 29

CAUTION! PROLOG AT WORK

SB Prolog! Wow! How can I put this? Well, you need at least 1Mb of memory to run it. I have 3Mb, and experienced no memory problems, so I guess that somewhere in the middle is the optimum. And, let's see – does the phrase "watching paint dry" mean anything to you? You guessed it – SBProlog is not fast. In fact it's slow. Catastrophically slow.

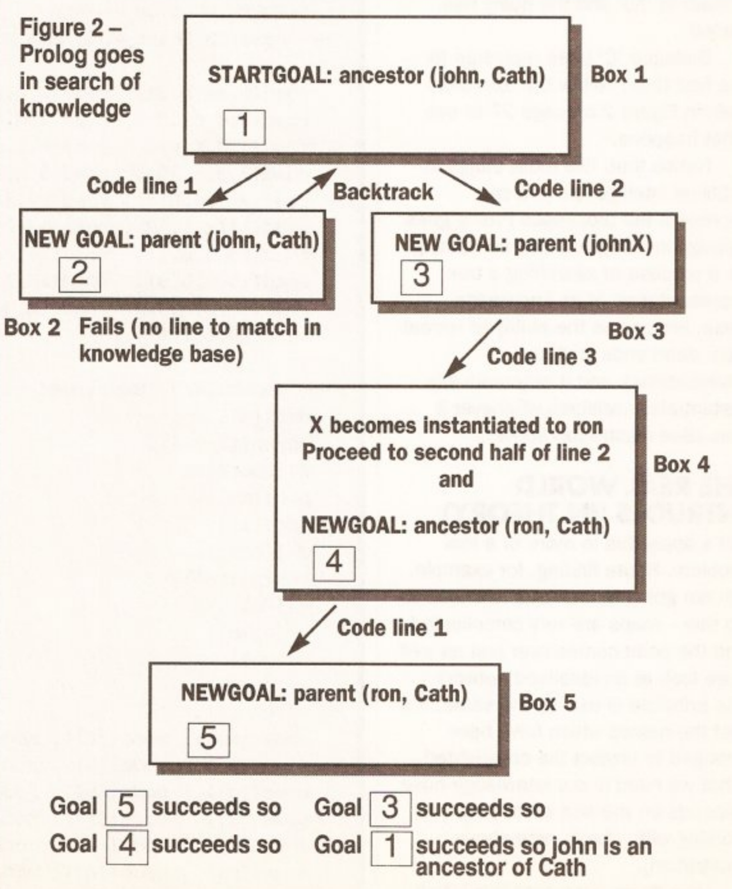
PROBLEMS WITH PROLOG

And there's another problem. As well as crawling along being the slowest Prolog I've ever used, SBProlog has bugs like I've never experienced. Indeed, I'm proud to bring to your notice a cracker of a bug, a real classic bug. Catch this: (deep breath) you have no idea whether or not the Interpreter is looking at the latest version of your source code or – after saying it has consulted it – it is still using an old version of the file it's got tucked away somewhere. Think about it for a moment! I'm sure you'll agree, this is a true classic bug, producing waves of doubt, fear and uncertainty.

THE FINAL ANALYSIS

The message from the guys who ported SBProlog over from Unix is that the fault is with the original version and nothing to do with them. My message is "Be warned". Although not the world's most lethal programmer, I've done more than a fair bit of Prolog over the years, and I had a climbing-the-walls kind of weekend. Let's face it, although anything that comes from the Unix world brings serious potential, (the manual alone runs to 104 pages – feel the quality) SBProlog is not at the moment a serious development tool. Then again, it's free. I dunno. In the final analysis what's the choice? AI needs Prolog. There's no other Prolog for the Amiga, so what are you going to do? Write your own? Handled with care, SBProlog can get you a fair way while you are waiting for the authorities to bring out a real Prolog. (On the other hand you may discover just how far you can throw a computer monitor.)

Figure 2 – Prolog goes in search of knowledge



continued from page 27

stands and follow an imaginary dialogue. (The line numbers and letters aren't part of Prolog – I've put those in for ease of reference.)

In dialogue 'A' Prolog is being asked if it is true that Ron is Cath's parent. It takes the predicate 'parent' and looks down the knowledge base until it finds a predicate that matches. (See line 3). It then sees if the arguments of the question are the same as the fact it has found. In this case the arguments don't match.

> ***"The most powerful tool in the Prolog's system armoury is recursion."***

Prolog then goes on testing all the predicates in this way until it finds a match. In this knowledge base the very next predicate (in line 4) matches completely. It can therefore stop execution and report that, yes, it *is* true that John is Ron's parent. The query has 'succeeded' in this case.

In dialogue 'B' Prolog is asked if Ron is Carol's parent. There is no predicate in the knowledge base to match this assertion, and so, the answer is 'no' and the query has 'failed'.

Dialogue 'C' uses recursion for the first time. Follow the execution path in Figure 2 on page 27 to see what happens.

Notice that, like most things in artificial intelligence, you can represent the processes Prolog goes through in trying to prove something as a process of searching a tree representation of its knowledge base. Prolog has the ability to retreat from dead ends (called backtracking), and it automatically instantiates variables whenever it can. (See illustration above).

THE REAL WORLD INTRUDES (IN THEORY)

Let's apply this to more of a real problem. Route finding, for example. I'm not going to look at a real map to do this – maps are very complicated, and the point comes over just as well if we look at an idealised network. The principle is exactly the same, it's just the names which have been changed to protect the copyrighted. What we need in our knowledge base depends on the sort of map we are working with. (Again, see above illustration).

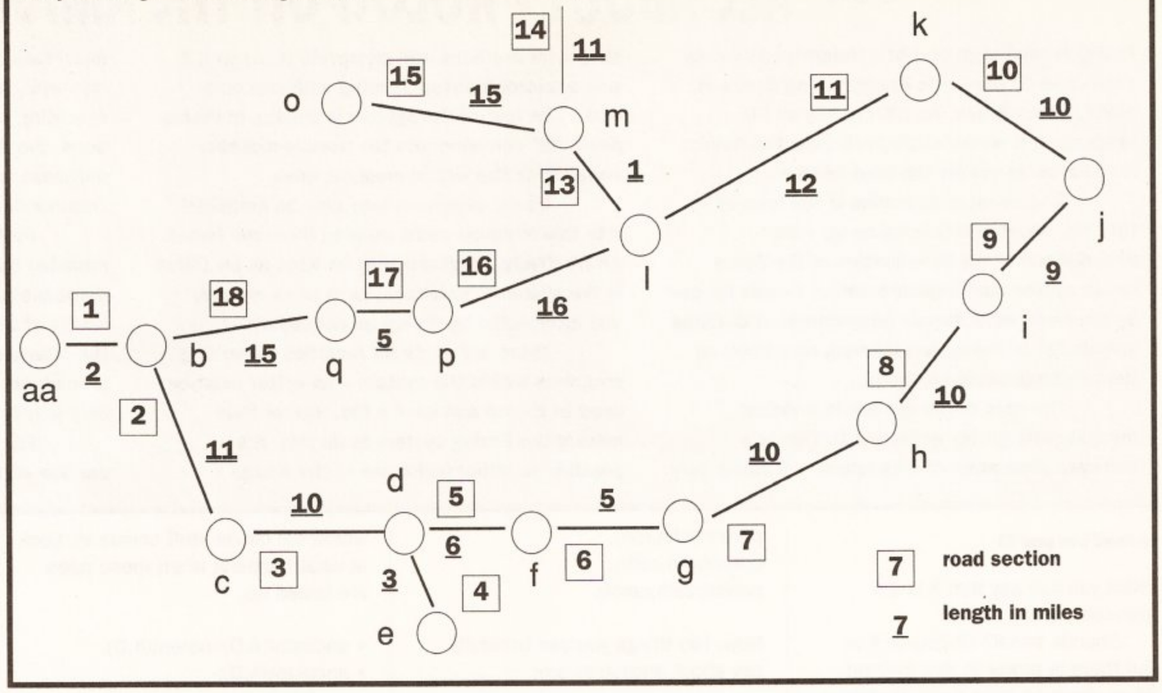
How do we represent this? Well, in Prolog it's easy. There are two types of things in the map, nodes, (corresponding to road junctions in the real world), and links between the nodes (the roads themselves). There are two data structures we need to think about first; these can be written as the two predicates:

```
node(N).
road(ID,Start_Node,End_↵
Node,Length).
```

The node predicate has one argument, and this is used for the particular name of the node. The road predicate has four arguments. We need to identify every section of road individually, hence the need for the ID argument.

Each road section stretches between two nodes – the Start_node and End_Node slots hold the IDs of these two nodes, and the Length slot holds the length of the road section in miles. By giving the road predicate a greater number of arguments you could hold all sorts of information needed by a real system (type of road, how crowded it normally is, average speed on road etc).

Figure 3 – Finding your way through the Prolog maze



ROUTEFINDER DEMO PROGRAM PART 1

```
/*——DATA SECTION ——*/
/*—— road(ID,Start_Node,End_Node,Length)——*/

   road(1,aa,b,2).   road(2,b,c,11).
   road(3,c,d,10).   road(4,d,e,3).
   road(5,d,f,6).    road(6,f,g,5).
   road(7,g,h,10).   road(8,h,i,8).
   road(9,i,j,8).    road(10,j,k,8).
   road(11,k,l,12).  road(12,l,g,10).
   road(13,l,m,1).   road(14,m,n,11).
   road(15,m,o,9).   road(16,l,p,11).
   road(17,p,q,5).   road(18,q,b,15).
   road(19,p,f,6).

/*—— Vocabulary (Explained in part 2) ——*/
   det([a]).
   oprep([from]).
   n([route]).
   pro([me]).
   pro([i]).
   qa([how]).
   tprep([to]).
   v([do]).
   v([give]).
   v([go]).
   v([get]).
   v([want]).
   node([aa]). node([b]). node([c]).
   node([d]).  node([e]). node([f]).
   node([g]).  node([h]). node([i]).
   node([j]).  node([k]). node([l]).
   node([m]).  node([n]). node([o]).
   node([p]).  node([q]). node([r]).
```

COMING NEXT MONTH

This is all I have room for this month – hang on until next time, when I'll be giving you the rest of the code for creating the route finder, which comes with a natural language front end.

We'll also be taking a look at a few more of the main features of Prolog, not forgetting lists, controlling backtracking along with some hints on negociating a network of connected nodes. AS

SHOPPING LIST

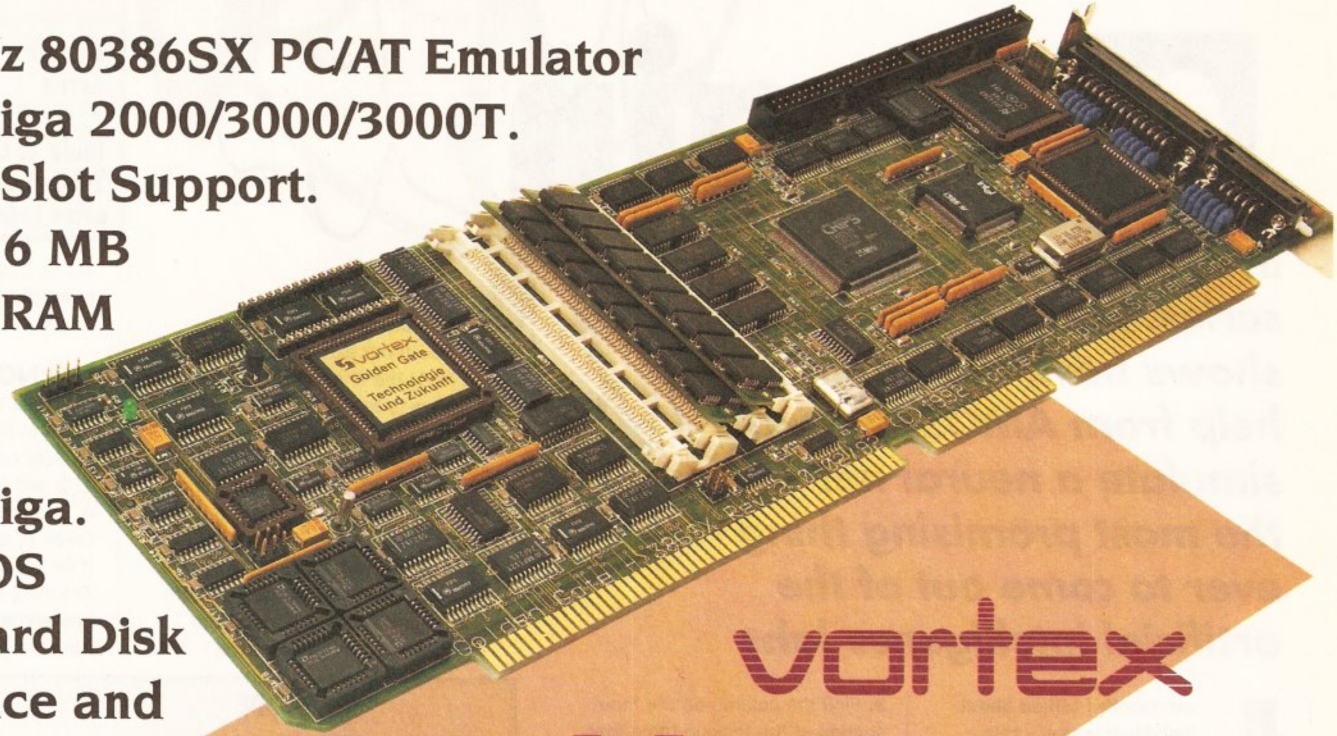
SB PROLOG £1.25
(Fish Disk 140)
(Disk PDU 29a)

Available from PD Direct:
Unit 3,
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Yes, I would like to get more information about the vortex PC/AT emulators.

❑ 80286 ATonce ❑ 80386SX Golden Gate

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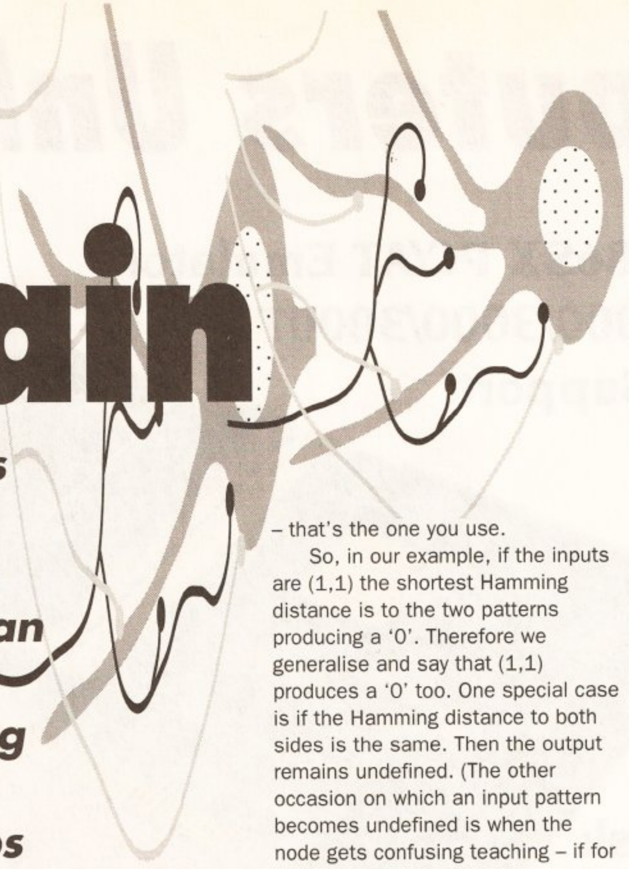
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Build a brain



In the second part of his series, Philip Gladwin shows how, with a little help from AMOS, you can simulate a neural net – the most promising thing ever to come out of the artificial intelligence labs

Last month I talked about individual nodes – this month we'll start to connect them together into a neural net.

Imagine a node with two inputs. It has four possible input states – Off+Off; On+On; On+Off; or Off+On. In real life the node would be assumed to have enough processing power to remember what it was taught via the teaching inputs, but as this is only a software simulation of a hardware setup we have to cheat.

To start with, assume that 'On' = '1', and Off = '0'. Then create a simple look-up table to hold the node's knowledge. To show you what I mean let's teach the node something – that it should put out a '1' when both its inputs are 0, and that it should put out a '0' when it has just one of its two inputs on. We'll *not* tell it what to do when both of its inputs are on. I've drawn the look-up table that describes this situation in Table 1. Notice that the table will have as many columns as there are possible input patterns: 4 for 2 inputs, 9 columns for 3 inputs, 16 columns for 4 inputs, etc.

So, the process of teaching the node this, becomes a matter of filling in the output row in a look-up table. Step by step, you should:

1. Look at each of the Primary Input channels. This information forms the Input Pattern. In this case assume that they are set to '0' and '1'.

2. Look at the Teaching Input channel. This is the Taught Input. In this case assume it is set to '0'.

3. Find the column on the Input section of the look-up table that matches the Input Pattern. If, for example Input 1 is currently a '0', and Input 2 is a '1', then you would use column 3 of the look-up table.

4. Enter the Taught Input into this column of the Output row – in this case enter a '0' into column 3.

The node has now been taught that input pattern. When the node is being used, as opposed to being taught, and is given this input pattern it will now be able to look up what its output should be.

HAMMING IT UP

One of the interesting things about neural nets is that they can even make sense of input they've never seen before. Remember the input pattern we didn't teach? What do we do with it? One way of handling it involves the 'Hamming Distance'. This gives us a way of measuring how far new input patterns are from the patterns we have already taught the net. Just count the number of elements by which the test pattern differs from your known pattern. So, the untaught pattern (1,1) has a Hamming Distance of 2 from (0,0), and a Hamming Distance of 1 from (1,0) and (0,1).

How does this help? Well, for all the columns marked as undefined in the output row of the look-up table, you take their input pattern, find the nearest (Hamming-style) pattern which makes the node put out a 1, and the nearest pattern producing a 0. Whichever distance is the shorter – that's the one you use.

So, in our example, if the inputs are (1,1) the shortest Hamming distance is to the two patterns producing a '0'. Therefore we generalise and say that (1,1) produces a '0' too. One special case is if the Hamming distance to both sides is the same. Then the output remains undefined. (The other occasion on which an input pattern becomes undefined is when the node gets confusing teaching – if for a particular pattern it is first taught that it should output, say, a '1', and then later gets taught that it should output a '0' in the same situation.)

Another special case is if there is only one defined kind of output in the row – either '1's or '0's. Here, each element in the row must become like the defined output.

If an input pattern remains undefined, indicate this with a question mark. When the node is in action this uncertainty is put into practice by the node outputting '1' or '0', at random with equal probability.

COLUMN	1	2	3	4
INPUT 1	0	1	0	1
INPUT 2	0	0	1	1
OUTPUT				
BEFORE	?	?	?	?
AFTER	1	0	0	?

Table 1: Look-up table for a 2-input node before and after teaching

NO NODE IS AN ISLAND

Right, let's put it together. Look at Net A in Figure 2. This is a feed-forward net. The output from nodes 1, 2 and 3 act as the inputs to node 4, and the output from node 4 is taken to be the output of the net. (I've left out the Teach Mode and the Teaching inputs for clarity.) Net B has some of its inputs coming in from the outside world, but it is said to be partly auto-associative as it has had an element of feedback, so that the output from one node is diverted and fed back into the net as another input. And look at fully auto-associative Net C, Go on, look at that feed-back – complicated! It's this type of net we're going to build.

How do we do this, exactly? I'll tell you next month, when you'll be getting the second part of the AMOS code too. AS

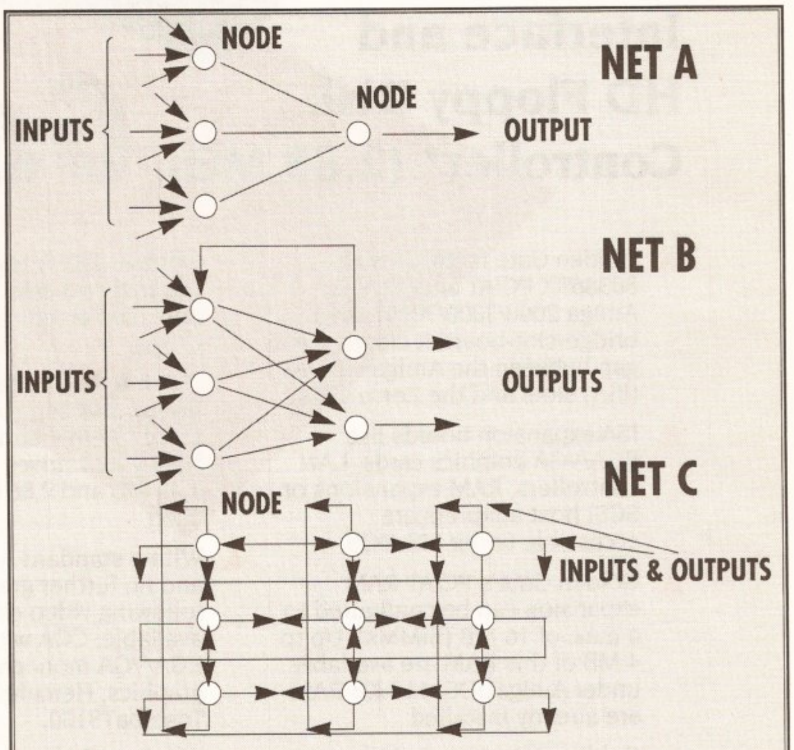


Figure 2: The complexity of a neural net (*It sure beats me – Ed*)

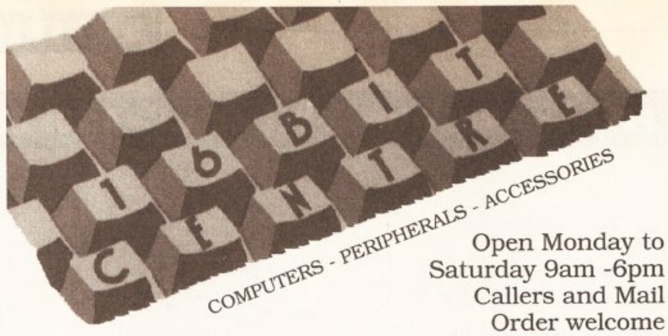
• AMOS NEURAL NET PART 1 • AMOS NEURAL NET PART 1 • AMOS NEURAL NET PART 1 •

```
'  Neural Net in AMOS  '
'by Philip Gladwin'
'1992'
'PART 1'

Dim NODE(9) : Rem holds current activation of node
Dim TRUTH_TABLE(4,16) : Rem holds all possible input patterns for 4
nodes
Dim OUTPUTS(9,16) : Rem holds current (unhamminged) knowledge of net
Dim CONNECTED(9,4) : Rem describes how each node is joined to neighbours
Dim NEIGHBOURS(9,4) : Rem describes if neighbours are on or off
Dim GEN_OUTPUTS(9,16) : Rem hamminged knowledge of net
Dim CLICKED(9) : Rem temp storage
Dim TEMP(9,16),TEMP_NODE(9)
'
Global NODE(),TRUTH_TABLE(),OUTPUTS()
Global CONNECTED(),NEIGHBOURS(),GEN_OUTPUTS(),TEMP()
'
INIT
LEARN
USE
'
Procedure ALLOCATE
   '________________
   ' This allocates the character '9' for the undefined
   ' input patterns to the outut section of the lookup
   ' table. (In the article text the char '?' is used
   ' instead).
   For N=1 To 9
      For J=1 To 16
         If TEMP(N,J)=0
            OUTPUTS(N,J)=9
            GEN_OUTPUTS(N,J)=9
         End If
      Next J
   Next N
End Proc
'
Procedure BUILD_ZONES[XIN,YIN,X1IN,Y1IN,ZON,WIDTH,DEPTH]
   ' Comments:  This will create width*depth zones in the rectangle
   ' defined by xin,yin to x1in,y1in. The zones will increment by 1
   ' starting at ZON. A very useful - and portable - procedure.
   Ink 2
   Z=ZON : X=XIN : Y=YIN : XE=X1IN : YE=Y1IN
   HX=Int((XE-X)/DEPTH) : HY=Int((YE-Y)/WIDTH)
   '
   For B=1 To WIDTH
      For A=1 To DEPTH
         X1=X+(A-1)*HX
         X2=X+A*HX
         Y1=Y
         Y2=Y+HY
         Set Zone Z,X1,Y1 To X2,Y2
         Box X1,Y1 To X2,Y2
         Z=Z+1
      Next A
      X=XIN
      Y=Y2
   Next B
End Proc
'
Procedure CELLS
   Shared CLICKED()
   '
   Repeat
      Repeat
         CLCK=Mouse Click : ZON=Mouse Zone
         If CLCK=1 and ZON<10 and ZON>0
            CLICK[ZON]
         End If
      Until(CLCK=1 and ZON=10) or(CLCK=1 and ZON=11)
      '
      If ZON=10
         For I=1 To 9
            If CLICKED(I)=1
               NODE(I)=1
            End If
            If CLICKED(I)=0
               NODE(I)=0
            End If
         Next I
         CLEAR_GRID
         TEACH
      End If
   Until CLCK=1 and ZON=11
   '
   Cls 0 : CLEAR_GRID : Ink 2
   Box 30,100 To 176,105
End Proc
'
Procedure CLEAR_GRID
   '________________
   Shared CLICKED()
   For I=1 To 9
      PBAR[I,0]
      CLICKED(I)=0
   Next I
End Proc
'
Procedure CLICK[NODE]
   '________________
   Shared CLICKED()
   If CLICKED(NODE)=1
      CLICKED(NODE)=0
      PBAR[NODE,0]
   Else CLICKED(NODE)=1
      PBAR[NODE,1]
   End If
End Proc
'
Procedure DELVE
   '________________
   Shared TEMP_NODE()
   For N=1 To 9 : Rem for every node
      For C=1 To 4 : Rem for every node get the neighboours
         X=CONNECTED(N,C) : Rem X = this node's current neighbour
      If NODE(X)=1 Then NEIGHBOURS(N,C)=1 : Rem if neighbour on then ...
         If NODE(X)=0 Then NEIGHBOURS(N,C)=0 : Rem  store it here
      Next C
      '
      FIND_TT_COL[N] : COL=Param : Rem 'c',zero,'1'
      STATE=GEN_OUTPUTS(N,COL)
      If STATE=1
         TEMP_NODE(N)=1
      End If
      If STATE=0
         TEMP_NODE(N)=0
      End If
      If STATE=9
         TEMP_NODE(N)=Rnd(1)
      End If
   Next N
   For I=1 To 9
      If TEMP_NODE(I)=1
         NODE(I)=1
         PPBAR[I,1]
      End If
      If TEMP_NODE(I)=0
         NODE(I)=0
         PPBAR[I,0]
      End If
   Next I
End Proc
'
Procedure DESCRIBE_NET
   ' describes how each node is linked in the net
   ' uses connected(node,neighbour) and there are
   ' four neighbours: left, top, right, bottom
   For I=1 To 9
      Restore 10*I
      For J=1 To 4
         Read CONNECTED(I,J)
      Next J
   Next I
   '
   10 Data 3,7,2,4
   20 Data 1,8,3,5
   30 Data 2,9,1,6
   40 Data 6,1,5,7
   50 Data 4,2,6,8
   60 Data 5,3,4,9
   70 Data 9,4,8,1
   80 Data 7,5,9,2
   90 Data 8,6,7,3
End Proc
'
Procedure FIND_TT_COL[NODE]
   COLUMN=0
   For I=1 To 16
      If TRUTH_TABLE(1,I)=NEIGHBOURS(NODE,1)
         If TRUTH_TABLE(2,I)=NEIGHBOURS(NODE,2)
            If TRUTH_TABLE(3,I)=NEIGHBOURS(NODE,3)
               If TRUTH_TABLE(4,I)=NEIGHBOURS(NODE,4)
                  COLUMN=I
               End If
            End If
         End If
      End If
   Next I
End Proc[COLUMN]
```

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Turbo Typist

Jason Holborn attempts to improve his typing skills with Sector Software's Touch Typist program

How well would you rate your typing skills? Unless you're a trained typist, the chances are they're not that great. Many of us have virtually no typing skills, relying instead upon our ability to search out the key we want by eye. Once found, we press each and every key using the same finger on each hand. The thumb may occasionally be brought in to press the space bar, but this is still a far from ideal way of typing.

If you watch professional typists, you'll notice that they use all ten of their digits to type. Not only that, but their eyes are kept on the screen, never once (well, rarely) moving them down to look at their keyboard. With practice, everyone eventually learns where the keys are located on the keyboard, but it would be impossible to type at speed without occasionally looking down at the keyboard. Unless, that is, you can touch type.

Touch typing teaches you to type by assigning a group of keys to each of the four fingers on each hand. To make things easier, all eight fingers move around the keyboard relative to a set of keys called the 'Home' keys. The index finger on your left hand, for example, starts on the 'D' key (one of the eight home keys) – to type the letter 'E', you move the index finger up, press the key and then return to the 'D' key. The left index finger is also responsible for pressing the 'C' key. Touch typing may sound rather long winded, but with practice it will speed up your typing considerably.

TYPE STYLE

Amiga touch typing programs are nothing new, but Sector Software's *Touch Typist* is by far the cheapest. Its low cost does come at a price though – there's no flashy packaging and no professionally typeset manual – just a single disk inside a rather tacky (and easily broken) plastic case designed for holding audio tapes rather than computer software. Don't let this put you off – inside it is a very good piece of software.

Instead of supplying a manual, Sector Software has built *Touch Typist*'s instructions into the program. I must admit that I've never been a great fan of this sort of documentation. OK, you don't have to worry about losing the manual, but the disadvantages are that you can't access the manual while using the program. If you're running one of the lessons, the only way to view the documentation is to break out of the lesson and return to the program's main shell. Hardly interactive.

Visually *Touch Typist* scores well. With screens designed in *Deluxe Paint*, the program presents you with a view of the Amiga keyboard. As you type, the program highlights the keys that you should be pressing. When the extra 'Hands' option is turned on, *Touch Typist* will even show you which finger you should be using. The program gets top marks for presentation, especially when you consider that the whole program was written using nothing more than HiSoft BASIC and a copy of *DPaint*.

FLESHY DIGITS

Touch Typist works in a very similar manner to virtually every other typing program on the market. Like a real typing course, the program starts by teaching you the fundamentals of touch typing – where the home keys are and which fingers are used to press which keys on the keyboard. Once you've got this sussed, you start by practising pressing the right keys with the right fingers, starting with one finger from each hand and building up until you are able to hit the right keys with all ten fingers.

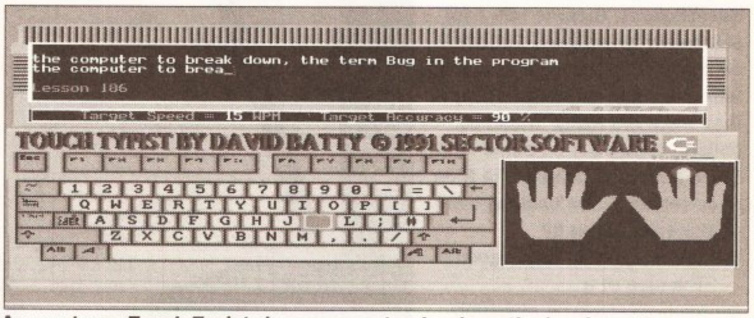
In these early stages, you don't actually type anything that is particularly readable. Indeed, the aim of these early lessons is to acquaint you with the techniques behind touch typing rather than to turn you into typing pool material. Once these foundations are there though, the lessons start to get a lot harder and you start to type in real sentences.

Like a real teacher, *Touch Typist* keeps its eye on your progress. If you are consistently failing to reach the required speed and accuracy for the lesson you are taking, the program will fail you and send you back a couple of lessons. You can view your progress for your own reference using the program's very nice graphing function which plots your progress in the form of a graph. If you're feeling particularly chuffed, you can even print this out.

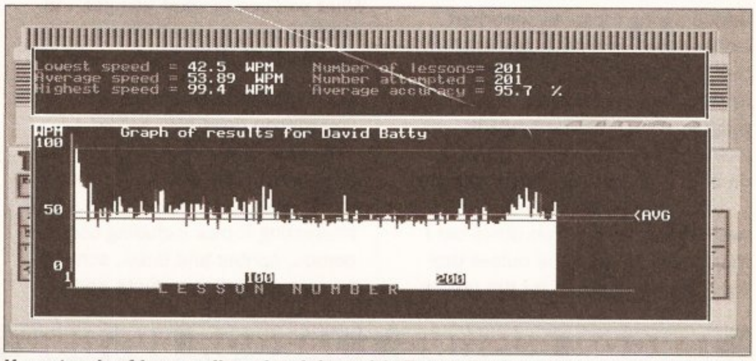
CONCLUSION

Apart from the lousy packaging and lack of printed instructions, *Typing Tutor* is a fine piece of software which achieves what it sets out to be. Having been taught to touch type in my college days using archaic PC tutors, it's nice to see that Sector takes advantage of the Amiga's improved video hardware. I like the 'Hands' option which, in conjunction with the on-screen keyboard, shows you at a glance where the key is on the keyboard and which finger you should be using to press it.

In all, if you're the kind of person who does a lot of keyboard work, *Touch Typist* is worth buying. Learning to type may not be a lot of fun, but learn to touch type and it will make your computing sessions less frustrating and considerably more efficient. AS



As you type, *Touch Typist* shows you not only where the key is on the keyboard, but which finger you should be using to press it



Keep track of how well you're doing with *Touch Typist*'s progress chart option

SHOPPING LIST

Touch Typist........................ £14.00
by Sector Software
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CHECKOUT
Touch Typist

Documentation ●●○○○
Building the documentation into the program is a good idea, but it is no substitute for printed instructions.

Ease of use ●●●○○
Without printed instructions to refer to, getting used to the program takes some time. Once you've got it sussed though, it's fairly straightforward to use.

Speed ●●●○○
Despite its Basic origins, *Touch Typist* operates smoothly at an impressive speed.

Features ●●●●●
Touch Typist is almost over qualified!.

Price Value ●●●●●
Tremendous value for money.

Overall rating ●●●●○
To improve your typing skills, look no further than *Touch Typist*. If it had printed instructions, I would have top marks!.

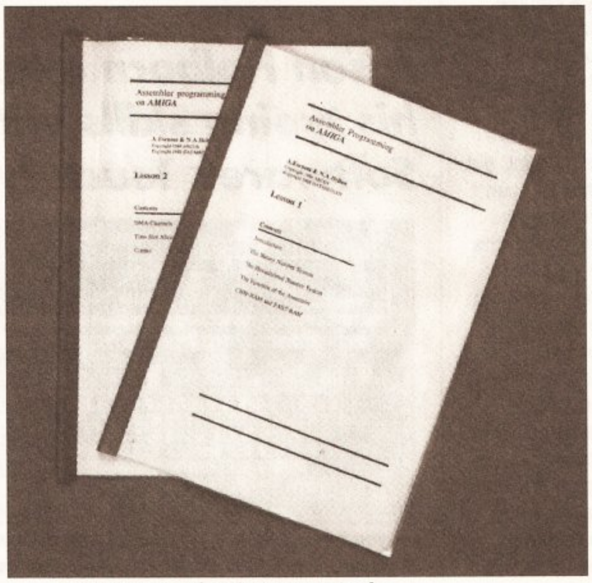
Copper loada this

Paul Overaa takes a look at DataSchool, the 68000 Amiga assembly language correspondence course

Despite the fact that the 68000's instruction set is relatively easy to understand, assembly language programming on the multi-tasking Amiga is not an easy subject to get to grips with. Nevertheless, there is still a lot of interest in low-level 68000 coding and it's obvious from the letters we see at *Amiga Shopper* that there are many 'would-be coders' crying out for some help. Some help is at hand in the form of correspondence courses such as the one offered by DataSchool, but is it any good?

The idea of a correspondence-style assembly language course, especially one which offers feedback and tutorial advice during those all-important early stages, is a good one and being rather more than just 'slightly interested' in assembler programming I was particularly looking forward to seeing what was on offer with the DataSchool course.

The course itself consists of twelve lessons plus two disks but I must emphasize at the outset that the material provided for the review was *not* the whole course, just the text for the first two lessons. These were provided as presentable clip-bound A4 wallets containing about 20 pages of material and in the absence of further information I must assume that the other lessons follow a similar format.



What you see is what you get – in addition though, a telephone help-line and written advice are offered

A course contents index in the first lesson does give some indication of the material to follow and towards the end of the course, there looks to be coverage of some interesting topics including copper demos, sprites and Bobs, scrolling, sample playing, interrupts and so forth. The early lessons however obviously have to cover more basic material and it turns out that Lesson 1 deals with number systems (binary<->hexdecimal conversion etc), assembler functions and chip/fast memory. Lesson 2 moves on to discuss DMA channels, time-slot allocation, and the copper.

Unfortunately the course gets off to a bad start due to translation difficulties. (I suspected that the course contents were originally written in one of the Scandanavian languages and DataSchool subsequently confirmed that the material has been translated from Danish).

Here are two extracts from the first lesson:

"When you program on AMIGA assembler, and for that matter also on any other computer systems – the assembler is used. An assembler is a program that allows you to programme in a simple way as it converts your writing to the figures ones and zeros. Fundamentally, it represents instructions to the various processors as to which wires to turn on (be equal to 1) to obtain a certain effect"...

Soon after this you find that:

"The first 512K of AMIGA's memory forms the CHIP memory and is named this way as it is occupied especially with CHIPS. All processors have access to this memory as they are also CHIPS, though special CHIPS, and sometimes they must wait for each other"...

Now I know that the translation of technical material is difficult, and I'm not suggesting for a moment that the original material did not read clearly. The fact remains however that, in the case of the lessons I've seen, the result as far as its English speaking audience is concerned, is a course lesson that is very poor indeed.

In addition to this, there could be problems with the overall structuring of the material. A copper list program in lesson 2, for example, is accompanied by a note to the effect that the program requires further explanation which will be given later in the course. Unfortunately there are many other instances where things are stated without any real explanation. I should point out that there are no factual inaccuracies as such, and it is just possible that the course material *does* improve. I suspect however that the translation-related issues will have left their mark on the rest of the course.

AFTER THOUGHTS

Now I do not like giving any product a bad review but having examined the parts of the course that were provided I am duty bound to what I consider to be an accurate appraisal of the review material.

To be fair it is possible that the course feedback, which includes both a telephone line and advice by letter, will go some way towards making up for the above deficiencies but in my view it would take a lot of help to compensate for the poor documentation. I'm sorry, DataSchool, but if the rest of the course material is similar to the first two instalments then I would imagine that you will have a lot of disgruntled customers on your hands. AS

JARGON BUSTING • JARGON BUSTING

68000 Assembly language – A low-level language designed to make the direct programming of the Amiga's 68000 processor a little easier than it would be if you were working with the binary numbers which the processor itself understands.

Copper – A co-processor chip used to handle the Amiga's display.

Copper list – A series of copper instructions, ie a copper program.

DMA – A hardware technique enabling data to be transferred between memory and a peripheral chip without directly involving the 68000 processor.

SHOPPING LIST

DataSchool per lesson.............. £12
2 disks @ .... £10 each
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by DataSchool
PO Box 2550
London N19 5AF
☎ 071 272 6981

CHECKOUT DATASCHOOL

Ease of Use ●○○○○
From the lessons that we've seen – not an easy course to get to grips with.

Features ●●○○○
Tutorial feedback could make the course more useful and latter lessons may well offer better material – but we've no way of knowing for sure.

Documentation ●○○○○
Text material suffers from serious translation-orientated readability problems.

Price Value ●○○○○
In its present state this course is not good value for money. In addition to the course you will need an assembler (K-Seka is the recommended package).

Overall rating ●○○○○
Enough said.

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Take Heart

Charles Ostman investigates ImageMaster – state of the art 2D image morphing, hot from the United States

There are occasions when a new product emerges that is so radical in its functionality that it is in a category by itself. *Imagemaster*, from Black Belt Systems (creators of the HAM-E technology) is one of those. It is an image processing tool which is several different and unique tools combined in a single environment.

Somewhat like *Art Department Pro*, it offers a wide range of special effects filters, colour and hue enhancement, file format conversion, and some unique image rendering effects. Since most of my time is spent rendering 24-bit raytraced images on various platforms (Mac, PC, and Amiga), I'm often confronted with decisions as to which environment to use to create an image or animation suited to the end result desired. *Imagemaster*'s special effects filters, and image processing tools are fairly similar to *Adobe Photoshop* on the Mac, or *ImageIn ColorPro* on the PC. This is where the similarity ends, however.

BITMAP MORPHING

ImageMaster offers one very unique feature, a bitmap morphing utility. This is quite different from traditional polygon mesh morphing, as it is performed in a 3D modelling animation routine. Morphing, an abbreviation for "metamorphosis", is the incremental transition from one form to another, rendered through a series of frames to provide a smooth, animated transformation.

3D modelling programs use wireframe constructions to create an object. The vertice points in this polygon mesh can be moved about in a definable displacement routine to alter the object's overall geometry and shape. It is therefore possible to define two object shapes, and have the vertice locations in the first shape relocated on an incremental basis until they are realigned in a fashion that represents the second shape. One example being a morph between two polygon objects, such as a sphere morphing into a cube. For most 3D modelers, the number of polygons, vertices and faces must be the same for both objects.

The limitation of this process, however, is that the morphing process is restricted only to objects which were constructed as polygon mesh structures. This provides no mechanism for dealing with image information from an external source, such as a scanned photograph, video frame capture, or images from raytracing or modelling programs.

MEGA MORPHOSIS

Furthermore, the ability to perform a morphing process on a 2D bit plane image provides an interesting array of possibilities, such as morphing texture, bump and brush maps which can be rendered on to the surfaces of 3D polygon mesh objects.

Current raytracing programs, such as *Imagine 2.0*, can apply a sequence of brushmap files to an object. This allows the user to create a scene in which a polygon mesh object could have an animated surface. Consider the possibility of a 3D morphing polygon mesh structure which also has a morphing surface!

SOPHISTICATED BRUSHES

Brush maps also have the characteristic of being a 'transparency' map. Again in *Imagine 2.0*, up to four brushes can be layered at once, providing a virtually infinite variety of surface features to an animated object. Effects such as a shimmering metallic sheen, chameleon-like pattern morphing, colour changing "filter" mapping etc, are well within the reach of the Amiga user. Such sophisticated effects, as seen in professional feature film or TV animations, previously could only be rendered on very high end Unix-based systems. Indeed, some of the potential effects that this type of 2D texture map morphing could be utilised for, have not yet been done at all.

Though the algorithms utilised for creating a 2D image morph are quite complex (much more so than for a standard polygon mesh morph), the interface for this process in *ImageMaster* is straightforward. As stated earlier, *ImageMaster* also has an impressive array of other image processing tools, far too numerous and complex to explain here. Indeed, the morphing utility is actually buried several menu layers into the program. When first entering the program, there is a main menu control panel which provides a variety of setup, buffer, and display option menu buttons, as well as the main program select buttons. After setting up the display options to suit your system, the next step is to invoke the file I/O control panel to specify the directory paths for the files you intend to work with and load. There is also a buffer control panel, which specifies how the loaded files are going to be arranged in terms of buffer access. This is an important feature to be aware of, since the morphing procedure (as well as many of the other image processing tools) will require at least two active buffers containing image files to be processed.

IMAGE INTERACTION

Once the primary and secondary buffers have been loaded up with image files, the compose panel (in the main menu) is accessable to the user. The compose panel provides access to the various processes that involve interaction with two or more images. The morph panel can then be activated. When this is done, three image frame boxes will appear





The images shown in this feature are actually a swquence of evry fifth frame of a fifty frame morphing series – above frames 1 and 5







Above are frames 10, 15 and 20 in the series of 30. If you're not into Pollock it probably looks a lot like moving petrol on a puddle

on the screen. One image box will show a low resolution, grey scale representation of the image loaded into the primary buffer, the next will show similar representation of the image file loaded into the secondary buffer, and the third box will remain blank until the morphing process is initiated. This box will show previous frames in the sequence, to provide a frame by frame view of the morphing transition.

The morphing process is based on defining 'morph points' on the image itself. The user can draw a series of points on the primary image, and then modify these to suit. The points on the primary image will also appear on the secondary image. By relocating the relative positions of these on the secondary image, the direction of movement and overall character of the transition can be adjusted. The points are recognised as a numbered sequence of position values, so that a very complex swirling effect can be generated by relocating the points on the secondary image to move across the entire image to an opposite XY location.

ON THE MOVE

The sample sequence of images shown here are examples of this process. Two raytraced scenes, rendered with *Raydance 1.0* were used as the primary and secondary images. Besides being able to control the 'motion pattern' implied by the relative relocation of the tag points on the images, the user can define the relative ratio of transparency between the two images throughout the morphing process. For example, if a morph process is executed across a sequence of 30 frames (the default value), frame 15 will be a 50% transparency overlay ratio of the primary image and the secondary images. This feature can be modified, and is represented via a graph which indicates 100% image content of the primary image at one side of the graph, and 100% image content of the secondary image at the other side. A linear transparency transition (50% transparency ratio at the middle frame in the sequence) is represented by a straight line. Nonlinear transparency ratios can be created, and are represented by a curve on this graph.

The example images were generated as a 30 frame sequence, with the default linear transparency transition factor. Every fifth frame is shown. The resulting 30 frames, when recorded on a video still frame recorder and played back, yielded a smooth, fluid morphing from the primary into the secondary image.

An application which I am interested in pursuing is a series of still frame morphs which can serve as 'motion links' between already rendered 3D scene animations. The last frame of a one animation sequence can go through a 30 or 60 frame still frame morph into the first frame of a second animation sequence, and so on. Since I render animations on a variety of platforms, this is an interesting editing option for combining clips from different platforms into one animation without going through a myriad of file format conversions and related compatibilty translation procedures.

WHAT'S THE CATCH?

There is a catch, however. You will need a robust system to support this type of image morphing. Rendering times per frame are dependent on the size (resolution) of the image frames, and the number of points defined in the image. I rendered these images on an Amiga 2000 with a GVP 33Mhz 68030 accelerator board, and 9Mb RAM (8Mb of Fast RAM). The frame resolution was set at 368 x 482 (for overscan NTSC video recording), and 42 points defined in the scene. The rendering time for the entire 30 frame sequence was over 50 hours, and subsequent rendering tests with higher numbers of points dramatically increased the rendering times. For serious practitioners of this sort of activity, I would strongly recommend, at the very least, a 25Mhz 68030 system, and preferably a 68040 upgrade to your Amiga 2000 or 3000.

FINAL THOUGHTS

As is the case with other complex rendering processes, time is the major bottleneck that the user will confront when composing a morphed 2D image sequence, whether it be for video recorded animations, or for animated texture and brush maps. The results are, however, stunning, and should provide an incredible arsenal of new image rendering options to work with.

STOP PRESS: ImageMaster is available in the UK from the Amiga Centre Scotland, Harlequin House, Walkerburn, Peebleshire. Cost: £175. ☎ 089687 583

CHECKOUT IMAGEMASTER

Graphics ●●●○○
The elaborate menus could be condensed a bit. However, the new upgrade about to be released will have this improvement.

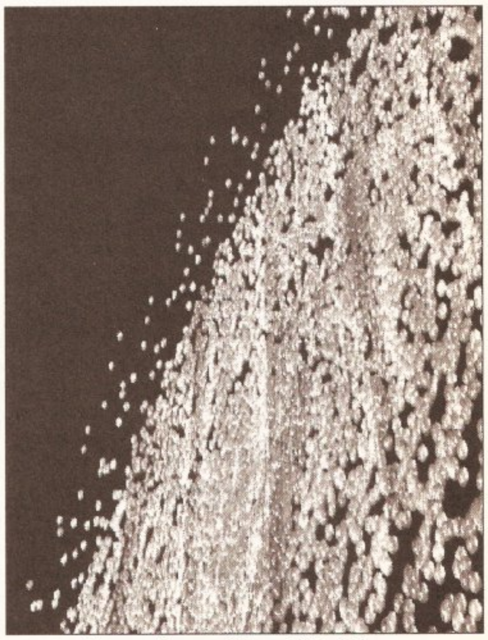
Ease of use ●●●●○
A serious image processing tool with a robust set of utilities, yet the logic of the menu systems is straightforward.

Performance ●●●●○
Complex algorythms such as blur filters, morphing and convolving are executed with relatively high efficiency.

Price Value ●●●●○
Excellent, a unique product for special effects and image processing.

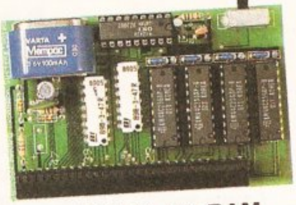
Overall rating ●●●●○
Capable of producing results of excellent quality – patience required!





Above - frames 25 and 30. When viewed as a continuous animation sequence, the shapes flow like a surreal river. Follow it at your peril...

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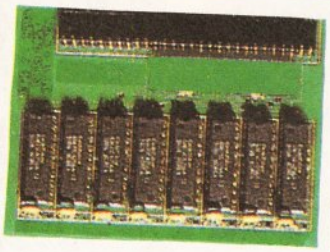
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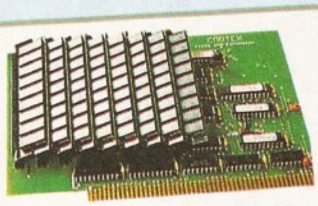
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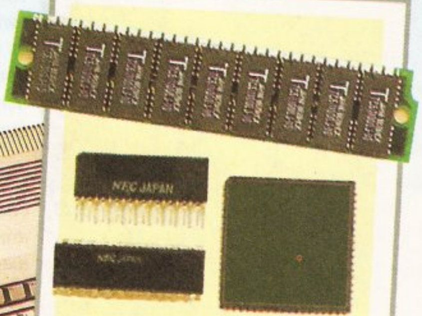
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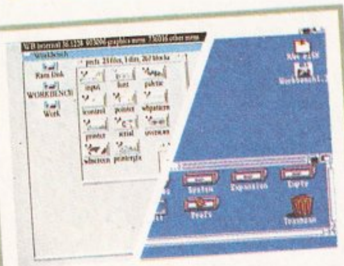
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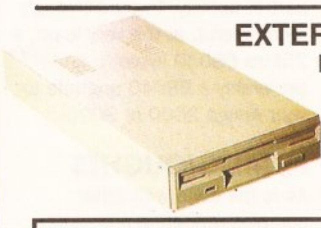
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CONTENTS AT-A-GLANCE

OUR EXPERTS TACKLE YOUR REAL-LIFE PROBLEMS

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STAR WARS

PRINTER OWNERS' VICTORY
UPGRADE TO FATTER AGNUS
SORT IT WITH C
LEARN ABOUT RECURSION
CONNECT THOSE MONITORS
MAC AND PC EMULATION

ALL OF YOUR AMIGA PROBLEMS VANQUISHED

SO WHAT DO ALL THOSE ICONS MEAN?


Beginners: this icon will appear next to any questions which are 'basic' in content.


General: this icon is used for any general Amiga-related queries.


Caution: be sure that you fully understand the answer before trying it out.


Danger: the answer to this question could well invalidate your warranty – or you!


Hardware: this icon is used to denote questions relating to general hardware.


Buying advice: we use this icon if the question asks us for buying advice.


Printers: this icon denotes a query about printers, printer drivers and so on.


Technical: any queries about programming will have this icon next to them.


Video: this icon relates to any query about using your Amiga with video hardware.


Music: this icon is for questions about MIDI, sampling, synthesizers and so on.


Programs: any program-specific queries have this icon next to them.


Comms: if your question relates to comms, this is the icon that we'll use.

WHATEVER YOUR PROBLEM WITH THE AMIGA, WE ARE HERE TO SOLVE IT

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We also cannot enter into personal correspondence – all enquiries will be dealt with in the pages of the magazine. This does mean a bit of a delay in solving your problem, but you'll just have to be a little patient and wait for it to appear in print. You won't get a personal reply even if you enclose an SAE with your letter, so please don't bother.

Send your question on the form below to: Amiga Answers, *Amiga Shopper*, Beauford Court, 30 Monmouth Street, Bath BA1 2BW.

The Amiga Answers panel consists of our consultant editors Mark Smiddy and Jeff Walker – and, of course, our resident deputy editor Cliff Ramshaw. We will also be calling on the services of all our other contributors, so you won't be able to catch us napping whatever the subject of your query.

Each panelist will be dealing with queries in their own specialist area(s) so it would help us greatly if, when writing, you label your query envelope with the name of the expert who can solve your particular problem.

Below is a list of areas of expertise. It's a list that we will add to and update every month, so you will know who to write to about any subjects not mentioned here.

Gary Whiteley – Video
Paul Overaa – Programming, music
Mick Draycott – Hardware, programming, MIDI
Jeff Walker – Desktop publishing, programming
Mark Smiddy – AmigaDOS, business, CDTV, hardware projects, hard and floppy disk drives
Jason Holborn – Public Domain, AMOS
Jolyon Ralph – Programming, hardware, CDTV
Cliff Ramshaw – The really hard stuff that no-one else can answer

---

If you send in a question for the Amiga Answers experts, please fill in and include the form below (or a photocopy if you don't want to cut up your magazine). And please also make sure that you include all the relevant details – version numbers of software and so on – so that we have the best chance of helping you. Send your form and question to: Amiga Answers, *Amiga Shopper*, 30 Monmouth Street, Bath BA1 2BW. Sorry, but we cannot personally reply to any questions – even if you include an SAE.

Name: ____________________

Address: ____________________

____

____

Your machine:

A500 ☐ **A1000** ☐ **A1500** ☐

A2000 ☐ **A3000** ☐

Approximate age of machine: __________

Kickstart version (displayed at the 'insert Workbench' prompt)

1.2 ☐ **1.3** ☐ **2.x** ☐

Workbench revision (written on the Workbench disk)

1.2 ☐ **1.3** ☐ **1.3.2** ☐ **2.x** ☐

PCB revision (if known). Do not take you machine apart just to look for this! __________

Total memory fitted (see AVAIL in Shell for 1.3 Workbench) __________

Chip memory available (see AVAIL in Shell) __________

Agnus chip (if known) __________

Extra drive #1 (3.5"/5.25") as DF__: Manufacturer __________

Extra drive #2 (3.5"/5.25") as DF__: Manufacturer __________

Hard disk: ____Mb as DH__: Manufacturer __________

Extra RAM fitted – type, size in Mb and manufacturer __________

Details of any other hardware which could help us to answer your question:

____

Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary.

____

AS 15

NO PROBLEM!

Hi, and welcome to another bumper crop of *Amiga Answers*. Never before have so many readers' questions been answered in a single issue – of any magazine. Every month we devote more space and apply more resources than any other Amiga magazine to solving your problems. We receive something like 100 queries a week, so the service is obviously appreciated.

It's my job to co-ordinate the whole thing: sorting through the questions and sending them off to the relevant chappies for the kind of in-depth answers you've come to expect; and compiling them into the lovingly crafted pages which you see before you.

I call on a wide variety of expertise to make sure you get the answers you need, which is why *Amiga Answers* is so successful. There's Mark Smiddy, industry guru, AmigaDOS-tamer and business applications wizard; Jeff Walker, probably the most knowledgeable Amiga desktop publisher there is; and Jason Holborn, long-time AMOS explorer and PD sampler, as well as good all-rounder (or should that be all round good guy?).

If it's a question about video, then I'll pass it on to Gary Whiteley, our professional videographer for whom the word 'genlock' means 'mixing Amiga graphics with video for magical results' and for whom the word 'snipwirral' means nothing at all.

Programming queries are dealt with by Paul Overaa, who's not afraid to code in any language, and who doubles as a MIDI maestro to solve your sequencing slip-ups.

Our hardware guru is Jolyon Ralph. This man knows just about everything about disks, both hard and floppy, and what he doesn't know about memory he's probably forgotten. Communication breakdowns are fixed-up by Phil Harris.

All in all, a formidable team, supplemented by my own not inconsiderable Amiga suss. Let's face it, if we can't answer your question, it's probably one of the Mysteries of the Universe.

Star Wars are raging this month, as we solve a host of readers' problems with Star printers. We give advice on the ever-popular Fat Agnus and Chip RAM problem. We explain how to write sort routines in C, and explore the murky depths of recursion.

We also supply instructions for connecting a host of different monitors to the Amiga, and give the low-down on Mac emulation. All of this, and much more – more than ever before – is revealed over the following pages. So if you have a problem, send it to us. We'll sort it – no problem.

Cheers,

Cliff Ramshaw

DO WHAT?



I've been given a Walters 2000 printer, plus a manual for it. I would like to print doc files, so I only need text. Can you advise me as to where to obtain a printer driver for it and what type of cable I need?

Bob Carlson
Ely
Wales

What type of cable? Well, if the printer is to be kept close to the Amiga you only need a short one, otherwise get a long one.

Seriously, Bob, what the hell's a Walters 2000? Is it one of the little things they used to make for the Spectrum or the C64?

You need to give me more information. Look through the manual to find out what emulation(s) it has, if any. Does it have a parallel or serial interface? Somewhere in the manual will be a 'specifications' section that will tell you these things. Write again when you know the answers. Better still, photocopy that section and send it with the letter.

And, while you're at it, is there a phone number and address for Walters in the manual? ***JW***

MANAGING MEMORY



How can I use the MMU (Memory Management Unit) in the 68030 to fool programs into thinking that all my RAM is in the 24-bit range. I have *Devpac 3* so I could use an assembly program. I may soon get Workbench 2 so a solution for both would be appreciated.

Andrew Thompson
High Wycombe
Bucks

Although it should be possible to do this with some MMU code, I doubt it will be very useful for you. There are few programs that require memory in the 24-bit range (the notable exception being the dreadful Amiga Basic). The main reason that memory in the 24-bit range would be of advantage in your system is to allow your A2091 hard disk controller to transfer data at full speed into the 32-bit RAM. This is impossible unless the memory is within the 24-bit range. However, MMU code only affects the way that the CPU accesses memory, not other hardware, and it would be impossible to move the CSA Mega-Midget racer RAM into the 24-bit range with software only. ***JR***

BARREN BASIC



I own an A500 Plus and am worried because I see lots of listings for Basic and don't know how or where to get it. I have read that it is supposed to be on the Amiga's Extras disk but it isn't on mine. Can you help?

Paul Edwards
Huntingdon
Cambs

Prior to the release of the A500 Plus, Microsoft's Amiga Basic interpreter was included as part of the system software. Unfortunately with the A500 Plus this is no longer the case and to program in Basic you will need to buy a Basic interpreter (and/or compiler). There are several good Basics including HiSoft Basic, AMOS and GFA Basic.

AMOS is probably the package that would be most suitable – firstly because it has excellent graphics facilities, and secondly because *Amiga Shopper* has a regular AMOS column, which means there are always plenty of useful listings and help-columns available. ***PAO***

ATARI MONITOR



Could you please tell me if it is possible to use the Atari 1224 colour monitor or the Atari 124 mono monitor with my Amiga 500 Plus, and how to wire up the connections.

Dick Cook
Enfield
Middlesex

Some good news and some bad news.

First the bad news. You won't be able to use the 124 monochrome monitor as it runs at all the wrong frequencies – ie 70Hz frame rate and 28Khz line (horizontal). This isn't really bad news as colour doesn't look so hot in black and white anyway.

Now the good news. I'm informed that the 1224 should work fine (thanks to stodd@CIX) and the connections are as follows:

1 Audio in
6 Green
7 Red
8 Ground
9 Horizontal sync
10 Blue
12 Vertical sync
13 Ground

So I would hazard a guess that the illustrated connections might do the trick – though you follow this at your

JARGON BUSTING • JARGON BUSTING

Basic – Beginners' All-purpose Symbolic Instruction Code is a high-level programming language which combines power with ease-of-use.

Bridgeboard – A plug-in card released by Commodore which enables the Amiga to run programs written for the IBM PC series of computers.

CIX – Compulink Information Exchange is a computer network accessed by telephone where users can send each other electronic mail and participate in discussions.

MIDI – Musical Instrument Digital Interface is a standard enabling a number of synthesisers to be controlled by a single keyboard or sequencer.

Printer driver – A program that sits inbetween any applications program producing output to the printer. It converts any codes describing text and graphics format into a form suitable for a specific printer.

own risk, you understand.

Amiga RGB Port		Atari 1224 Monitor
3	RED	7
4	GREEN	6
5	BLUE	10
11	HSYNC	9
12	VSYNC	12
16	GROUND	13

GW

1500 QUESTIONS

Having owned an A500 for almost two years now, I've decided to update. However, with the recent rumours of the A800, I'm not quite sure whether it would be wise to buy the A1500 now or wait for the new machine. Could you therefore please answer the following questions.

a) Is the A500 software compatible with the A1500?

b) If I bought an A1500, would it come complete with the Enhanced Chip Set and Workbench 2.04?

c) Which is the best hard drive for the A1500? Is the GVP drive any good?

d) Which monitor is better – the Philips CM8833 Mk2 or the CBM 1084S?

e) Which is the best Bridgeboard for the A1500?

f) What's a Trumpcard? Is it a type of Bridgeboard?

g) Which is the best colour printer – the Star LC200 or the Citizen Swift 9?

h) Does *AudioEngineer* work with the A1500?

i) Which is the best value MIDI interface on the market?

j) What software should I buy with it?

k) How much will the A800 cost when it is finally released?

l) What is the difference between the A800 and the current A1500?

m) Is the A1500 and the A800 compatible with the A570 or future CD ROM drives?

n) Now that the A600 is finally out, will Commodore be releasing the A800 fairly soon?

Edward Baker
Tonbridge
Kent

a) Totally. After all, both use exactly the same processor, the same type of custom chips and the same operating system.
b) These days all A1500s and B2000s come complete with both 2.04 and ECS. Always check before you buy though – some mail order companies may still have stocks of earlier 1.3-based machines.
c) I personally use an ICD AdSCSI Advantage 2000 controller card with a 90Mb Fujitsu drive inside my 2000 (the Fujitsu drive was actually bought separately from Checkmate Digital though – most ICD cards come with 40Mb Quantum drives). I've had for mine for about 2 years now and it has never crashed once (touch wood!). The GVP drives are also very good indeed, so just shop around for the best prices.
d) In many respects, the Philips and Commodore monitors are actually one and the same. Commodore doesn't actually make monitors – all it does is to buy them in from companies like Philips and then rebadge them. With this in mind, buy the one that is cheapest!
e) Commodore makes two Bridgeboards – the A2088 XT Bridgeboard (based around the Intel 8088 processor) and the more powerful '286-based 2286 card.

Personally though, I won't buy either of them. Although the '286-based Bridgeboard is quite a nice bit of kit, it is rather expensive. If you need PC emulation, your best bet is to treat yourself to the KCS Card and A1500 Adaptor both of which are available from Bitcon Devices.

Having owned a Bridgeboard myself (until the damned thing died!), I now have a KCS card installed inside my 2000 and I have to say that it is miles better than the official offerings. Although it does not multitask (which is a shame), it's as fast (if not faster) than some '286-based PCs I've had to displeasure to use.

f) The IVS Trumpcard isn't a Bridgeboard at all – it's actually a hard drive controller.
g) If I had to choose between these two printers, I'd go for the Star simply because it is a 24-pin printer.
h) *Audio Engineer* runs through the parallel port so it will work perfectly well on both the A500 and the A1500.
i) MIDI interfaces are pretty much the same, so just buy the cheapest one you can buy.
j) How long's a peice of string? What software you buy for your MIDI system depends entirely upon what you wish to use it for. Undoubtedly you'll need a sequencer though.
k) Nobody really knows whether the A800 actually exists, so don't bank on it arriving within the immediate future. What I can say though is that I'd be very surprised indeed if a machine like the A800 didn't eventually arrive.

After all, the Amiga's technology is no longer at the leading edge, so Commodore knows that it has to do something quick to keep the Amiga ball rolling.

l) If the rumours are true, quite a bit. Once again though, Commodore hasn't confirmed the machine's existence, so it would be pointless to waste magazine space on something that may be nothing more than idle speculation. If you need to find out more though, check out issue 13 of *Amiga Shopper*.
m) At the moment, the A1500 is not compatible with the A570 simply because the drive runs through the A500's expansion bus. Commodore is planning to produce an internal drive for the other Amigas though, so you will eventually be able to run CDTV software on the A1500.
n) If the machine does exist, don't expect to see it for quite a few months. My guess is that Commodore will launch an upgraded machine around October time (just in time for the Christmas rush!). ***JH***

BUT IS IT COMPATIBLE?

Noticeably missing from your *TurboPrint Professional* article was any mention of whether it was Release 2 compatible. Is it? And is it worth getting with Release 2, or does Workbench 2.04 do everything *TurboPrint* does? Lastly, is *TurboPrint* available in the USA?

Lawrence Horwitz
Aurora
USA

Yes, *TurboPrint Professional* is Release 2 friendly. You'll find that Release 2 compatibility can be taken for granted in our reviews unless it is specifically stated that a product is not compatible.

There are very few additions to printer preferences in Release 2 so everything in that *TurboPrint* review applies to Workbench 2.04 as well as 1.3.

As to where to get it in the USA, I don't know. It's only just made the trip from Germany to the UK, and even then only at the instigation of a UK distributor which actually sent someone to Germany to get it. ***JW***

ONE MAN BAND

I refer to two answers given in the May issue regarding printers and banding.

It is said that 9-pin printers are better than 24-pin printers, and in one case the enquirer is warned off buying a Star LC24-200 because of banding. I am interested in this because I am considering getting another printer to make the best of my recently acquired *Wordworth 1.1* word processor. I was on the point of ordering an LC24-200 because my LC24-10 has developed a fault in text printing.

I enclose some printouts done on a Star LC24-10, a Citizen 120D and a Hewlett-Packard PaintJet. You will see: (1) that banding occurs on all of them, but the PaintJet banding is almost unnoticeable when dumped from a coloured screen; and (2) that the 9-pin Citizen is terrible compared with the 24-pin Star.

I must therefore question your very positive views on 24-pin printer banding and wonder if you are not perhaps being a bit too specific?

Of course, my experience only lies with these three printers and you have possibly tested most of them. In which case you may be able to say what you think is the best medium priced dot-matrix printer for both text and graphics.

Vic Trinder
Weymouth
Dorset

We don't have room to publish your example printouts, Vic, but if you look a little harder at the actual *banding* in the dumps, rather than the 'quality', you will see that overall the banding on the 9-pin example is no worse than that of the 24-pin - both pictures have very noticeable horizontal stripes all the way down them, caused by the dither patterns that form the 'grey' areas not matching up perfectly.

But if you examine the dumps very closely you will see that there are certain areas of the 9-pin dump – the lighter areas – that have no visible banding at all, whereas in the 24-pin dump the same areas can be seen to be banded.

I stand by what I said, although I should perhaps point out that the 'quality' of 24-pin dumps is higher, of course, because 24-pin printers produce smaller dots and print at a greater resolution (that is, they print the dots closer together). But the banding *is* worse.

As for which is the best all-round medium priced printer, at about £200 the 360 by 360 dots-per-inch Canon BJ-10ex bubble jet printer cannot currently be beaten for price/performance. ***JW***

BLOCKED FOUNTAIN

After recovering from Christmas I became interested in *Fountain* on the Extras 2.04 disk. But every time I try to load it I get "Unable to open diskfont.library V37" – this is on the disk, so what is wrong?

James Sinnott
Crosby
Liverpool

There are two versions of the diskfont library with Workbench 2.04,the smaller on (on the Workbench disk) does not support Compugraphic fonts(and therefore doesn't support *Fountain*). Copy the larger version (on theAmigaFonts

continued on page 52

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continued from page 48

disk) onto your Workbench disk and reboot. This will enable you to run fountain. *JR*

MIDI ECHO (ECHO...)

I have a Yamaha PSS 790 keyboard and decided to use the free *Sequencer One* software given away on the cover disk of *Amiga Format* in January. My problem is that all the information received by the PSS-790 seems to get re-transmitted as it is received. If I record a sequence on track 1 using channel 1 and then try to add a different sequence on track 2 using channel 2, I end up with my second track containing both my new sequence *and* the data which was originally on track 1.

This problem increases and by the time three tracks have been created the result is a right mess and it seems impossible to build up compositions using multiple instruments. Different settings have been tried on both the keyboard and the sequencer but it makes no difference. Have I got a faulty keyboard?

D Arrowsmith
Knutsford
Cheshire

Your keyboard is not faulty – this problem is caused by the Yamaha PSS 790 and it stems from a design fault rather than a malfunction. As you've already discovered the PSS 790 automatically transmits anything received at its MIDI IN terminal back through its MIDI OUT (strictly speaking a MIDI OUT should not do this). A number of MIDI units use their MIDI OUT terminals in this way but usually it's possible to switch the input data-echoing off and cause the OUT terminal to behave as a true MIDI OUT. The trouble, as far as the PSS 790 is concerned, is that there are no options available to prevent the MIDI OUT echoing the input data!

With the original *Sequencer One* program there is nothing you can do to improve things but you might like to know that the new *Sequencer One Plus* contains a facility specifically designed to solve this problem – it allows data on all channels, except for a single user-specified channel, to be filtered out and so provides exactly the isolated channel recording that you need for multi-channel/multi-instrument sequencing work with the PSS 790.

Sequencer One Plus is available at a special discount to existing *Sequencer One* users (and that includes those who got their copy from *Amiga Format*). It costs £39.95 and in addition to being able to solve your PSS 790 related problems it contains a number of other useful enhancements including controller editing, sysex handling and a new note editing system. You can get further details from Gajits Music Software ☎ 061-236-2515. *PAO*

Because of the width of the columns in *Amiga Shopper*, we occasionally have to break listings across two or more lines. Where this has occurred, and you should enter two or more lines without a [Return] between them, we have used the following symbol: ↵

JARGON BUSTING • JARGON BUSTING

Agnus chip – The custom chip dedicated to graphics. The first three versions – 8361, and the 8370 and 8371 Fat Agnus – can access 0.5Mb of Chip RAM. A later version, 8372a, can access 1Mb; while the ones used in A500 Pluses and the A3000 can access 2Mb.

Kernel – The group of programs at the very centre of the operating system. Many useful routines are contained here which can be used by other programs. The name comes from the analogy of a nut – the Kernel is the centre, the Shell is the outside through which the user gains access.

SCSI – Small Computer Systems Interface is the standard used for connecting hard drives, CD ROM drives and so on to computers.

Sequencer – A piece of software on a computer which stores musical scores and transmits this information in real time via MIDI to synthesisers.

UPGRADING QUANDARY

I have an A500 (V1.3) with fatter Agnus. I know my board is Revision 6A. Assuming the new A500 Plus board is based on this, will it be possible to fit the Super Agnus, the new KS2.04 ROM, and new Denise?

I will probably go ahead and fit my RAM chips from my memory expansion board into the empty sockets on the motherboard. Currently, if I do this, I know I will render the trapdoor useless. If it is possible to fit the Super Agnus will the trapdoor be able to fit the A500 Plus memory expansions? Assuming so, can I take the clock or the old memory board and link it up to the motherboard – what do I do to link the clock. Are all the *ROM Kernel Manual*'s up to date yet? If so, can users 'upgrade', or have they got to splash out another £30 for new ones?

Stephen Wilson
Irvine
Ayrshire

The board in the A500 Plus is a new Revision 8 board. It has the clock already fitted, and support for the SuperFat Agnus chip. The revision 6 board doesn't, so it's not possible to expand chip memory beyond 1Mb without adding the MegaChip board (around £200), which includes 1Mb of extra memory.

There is, as far as I know (and I've looked quite hard), no way of adding the chips on to the spare spaces on the revision 6 A500 board to get 1Mb of Chip RAM whilst using an extra 0.5Mb of RAM in the trapdoor (If anyone does know a way, please write in and let me know).

The *ROM Kernel Manuals* are now up to date, except for the *Libraries and Devices* manual which has now been split into two volumes: the *Devices* manual is out (and is well worth a read, despite there still being no real documentation on how to use devices from assembler code), but I have not yet seen the new *Libraries* manual. *JR*

DISKCOPY PROBLEMS

I am having problems copying disks from Workbench using the Duplicate option from the pull down menus. Whenever I attempt to copy a disk, the machine displays a requester containing the words 'Reading 0, 79 to go' and then hangs. What's going wrong?

IL Mistry
Bradford
Yorkshire

You've got a virus! Or, to be more precise, you've got the *Lamer Exterminator II* virus on your Workbench disk (and quite a few other disks, I suspect!). To stop this from happening, treat yourself to a virus killer and check through all your disks. *JH*

CARTRIDGE DRIVES

I have a Commodore A2091 40Mb hard card, which is absolutely full to bursting, so I desperately need to add another hard drive to my system.

My ideal solution would be the Syquest Sq555 44Mb cartridge drive which I could fit in the 5.25" drive bay, but I understand that this cannot be used with the A2091 controller card, even though both are supposed to be SCSI (a nice chappy at Diamond told me that). It apparently needs a separate controller, the "IVS Trumpcard" for it to work.

Would I simply be able to add this card to one of my vacant expansion slots? If this is possible would the drive auto-mount like the A2091? Would I be able to use the A2091 HDTools software to prep and partition the Syquest?

Also, how would I connect another hard drive internally? The A2091 doesn't seem to have anywhere for another drive to connect to it. Would I have to take a cable out of the back of the computer to connect to the A2091's external connector?

Stuart Davis
Langley
Eastbourne

I'm afraid you've been misled. The Syquest SQ555 works quite nicely with the A2091 controller card. It doesn't require a special controller at all. However, the A2091 doesn't support disk changes (it won't automatically recongnise when you swap cartridges), but if you reboot when swapping cartridges, or from the CLI type DISKCHANGE xxx:, where xxx: is the drive name, in then it will work fine.

You can use the standard software to partition the drive connected to the A2091, but you won't be able to use this software with anyone else's controller. The Syquest cartrides automount and appear to the system like any other hard drive.

Connecting the Syquest is quite straightforward. You will require a SCSI lead with three connectors. Plug one into the back of each drive, and the third into the A2091 board. You won't have to worry about SCSI terminators or other such things with the A2091, as it doesn't appear to take much notice of SCSI terminators, making it the easiest SCSI board to configure on the market. *JR*

PRINTER COMPATIBILITY

Could you give me some advice on the compatibility, or more correctly the lack of compatibility, between my Amiga 500 Plus and my printer?

I have used *Protext 4.2* to type this letter and you can see that up to now all is well. The problem lies with characters that aren't letters

continued on page 56

Star Wars

Printer problems seem to have filled our mail bag recently, so Jeff Walker has put together a few solutions to give you a head start at printing

I am experiencing problems with my Star LC-10 Colour printer. The top of my text is missing. What I can't understand is that text done with *Deluxe Paint* on the same printer is all right, as you can see from the example print-outs I have sent.

The self-test print-outs are a mixture of good and bad. Strangely, text done from a Basic LPRINT command in lower case is also OK, but in upper case it is not.

I have written to Star about the problem and the people there suggested that it may be the print head not firing correctly and they are sending me a list of suppliers of the head and the names of companies which can carry out the repairs. Although the people at Star gave me the part number and price of the head and I ordered this direct from them intending to fit it myself, I was subsequently told that they do not supply direct to customers, which I feel is a bit crazy.

One last query. How can I alter my *Protext 5.04* to do a current date from the Sundry menu? It has been like this since the leap year started, insisting on giving me a date one day in advance.

Charles Butt
Worle
Avon

I would agree with Star, your printer head is broken. If you have not yet had it fixed, perhaps you could buy a second-hand LC-10 and use it for spare parts? It might be cheaper. You could advertise in the 'Wanted' section of our Reader Ads page, or perhaps there's someone with an old LC-10 they don't want and is reading this...?

The date problem with *Protext* is a bug, someone at Arnor forgot that 1992 is a leap year and so February 29 didn't happen. Send your *Protext* program disk back to Arnor and it will replace it with a corrected version free of charge. ***JW***

I have a 1.3 1Mb Amiga 500 and a Star LC24-10 printer. My query concerns printing from Workbench. When I alter the various settings in the Preferences window I get all the changes I request except the page length.

If I set the length to, for example, 50 lines and I request a printout of a 'Muchmore' document using fanfold paper 8.25in wide by 12in long, it just prints over the perforations with no regard to the preference length setting.

I've rung all the changes on the printer dip switches, but still no joy. I have no problems doing the same thing with my word processor, *Protext.*

Ian Conway
Bridlington
North Humberside

Despite you ringing all the changes, it sounds very much like the dip switches are set incorrectly.

You should turn dip switch SW1-3 (that's dip switch bank 1, switch 3) to OFF to enable the perforation skip, or to give 'a one-inch bottom margin' as Star calls it, and then switch SW1-1 to off to set the printer for 12in paper. Printer Preferences should be set to 72 lines for page length at 6 lpi, or 96 lines for 8 lpi, and don't forget to select Fanfold. (If you are using A4 fanfold paper set the dip switches as above and set your page length to 70 lines in Workbench Preferences.) ***JW***

I have recently bought a Star NX-15 9-pin printer. I can print graphics from *Deluxe Paint IV*, but a full screen prints out only 125mm by 120mm (5in by 4.75in). I tried changing the density setting in the printer preferences, but this did not make any difference.

The driver I am using is EpsonX[CBM_MPS-1250], but this driver will not print text. If I try to print text the printer goes off the right-hand side of the page. I have to use the Generic driver for text.

Howard Lynn
Rushden
Northants

The NX-15 is a wide-carriage, 136 column printer and emulates old Epson and IBM 9-pin printers. This means that in Epson mode it should work perfectly well with any of the EpsonX drivers on the Extras disk, and best of all with the EpsonX[CBM_MPS-1250] driver.

The fact that you say it does weird things when you try to print text suggests to me that you have it in IBM mode. Set SW2-5 to ON to put it into Epson FX-105 emulation. This should sort out your *Deluxe Paint* printout problem too. ***JW***

Do you know of a printer driver that will allow me to access all the features of the Star LC24-200, or for one of its emulations – Epson LQ-860, IBM Proprinter X24E? I want to use it with *Wordworth 1.0.*

David Liddle
Rossington
South Yorkshire

It's not a printer driver you want, it's a word processor that allows you to send specific Star LC24-200 control codes to the printer in order to switch various features on and off.

Wordworth caters for simple things like bold, italics, underline etc, but to get at the printer's fonts or features like quadruple height and quadruple width you need to be able send the control codes for those features to the printer from the word processor. The only Amiga word processors with this freedom are *Word Perfect* and *Protext*. ***JW***

Having recently moved up from a C64 to an Amiga 500, I am having terrible trouble printing graphics using *Deluxe Paint III* and *IV*.

I have a Star LC-200 Colour printer and the only driver on the Extras disk which prints out graphics is the EpsonX[CBM_MPS-1250]. The text in monochrome is OK, but the colour is terrible.

When I used the C64 with a driver from Datel Electronics there were no problems – the yellow did not have any red dots in it – and I got a near perfect printout.

Alan Doyle
Kingswinford
West Midlands

There's much better driver for the LC-200C called Star9Plus, available on a £2 (inc) shareware disk called Jamdisk 5 from: *JAM*, 75 Greatfields Drive, Uxbridge UB8 3QN. ***JW***

JARGON BUSTING • JARGON BUSTING

Dip switch – A method employed by several devices, including hard drives and printers, to enable the user to make manual adjustments to the way the device behaves. Printers typically have dip switches to control line feeds, perforation skips and the kind of fonts they will use.

Escape codes – A means of sending a printer formatting instructions embedded in an ASCII text file.

Lprint – An instruction in the Basic programming language which sends textual and numerical output to the printer.

Muchmore – A public domain program which will display text files and enable the user to move through them easily.

Printer driver – A program that sits inbetween any applications program producing output to the printer. It converts any codes describing text and graphics format into a form suitable for a specific printer.

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continued from page 52

or numbers. I have reproduced some at the bottom of this letter as examples.

I have never seen any mention of my printer in any article, and yet it is in current production and is a great machine. It is a Canon Typestar 7 Typewriter, with a Canon parallel I/F-30 interface.

The printing method is stated to be 32 by 26 dot matrix, the keyboard has 108 characters. I have been told that the printing is as per Diablo 612, but this means nothing to me. And means even less when I am about to choose the 'Print Text AP' option in *Protext*.

Maybe I am restricted to being able to print only characters which appear on the Canon keyboard? But I will be quite happy to achieve that!

Alan Wright
Appleton
Cheshire

Alan's problem is that some characters, like # and $, are printing out with an 'R' directly before them. But he hasn't told me which *Protext* printer driver he is using, so I can't investigate.

Alan, my advice is two-fold. Firstly you should upgrade to *Protext 5.5*, which is bigger, better and faster than 4.2. Secondly you should contact Arnor (☎ 0733 68909) and ask the people there nicely if they'll write a Diablo 612 *Protext* printer driver – *Protext* comes with a Diablo 630 driver, and it might be the case that this only needs a slight tweek to work with the 612, and thus your Typestar 7, so armed with the *Protext* printer driver manual and the Typestar 7 manual you may very well be able to do it yourself. ***JW***

JARGON BUSTING • JARGON BUSTING

C – A compiled language designed primarily for systems programming. It was used to write much of the Amiga's operating system, and is used in the writing of many Amiga applications.

Chip RAM – The area of the Amiga's memory directly accessible by the custom graphics and sound chips. Originally a maximum of 512K, newer machines fitted with the fatter Agnus graphics chip can access 1Mb, enabling smoother animations and more screens to be displayed at once. The new A500 Plus comes with an Agnus chip capable of addressing 2Mb of Chip RAM.

Compiler – A means of translating a program to render it understandable to the computer. A compiler translates the whole thing into machine code before it is run. The compiled program is generally much faster than its interpreted counterpart.

Fast RAM – Any extra memory which is not Chip RAM. The custom chips cannot access it, and because such accesses to Chip RAM can block out the central processor and slow down its own accesses, Fast RAM is faster.

Guru – A message from the Amiga saying that an error has occurred. The message appears in a red box and includes two numbers which are of use to programmers trying to ascertain why their programs have failed.

AMOS PLUS POINTS

I am planning to part exchange my A500 for the new A500 Plus. However, I have a couple of questions that I would like answered first.
a) How do I get Fast RAM on the Plus without having to expand the Chip RAM to the 2Mb limit? I'd like to have 1Mb of Chip RAM and 1Mb of Fast RAM.
b) Are AMOS, the AMOS Compiler and AMOS 3D fully compatible with the Plus? If not, will upgrades be made available?

Chris Zissopoulos
Athens
Greece

a) Put simply, you can't (well, you could, but you'd have to carry out some hardware modifications). Anyway, why would you possibly not want 2Mb of Chip RAM? The bus contention that is an unavoidable side effect of Chip RAM can be a pain at times, but the advantages that it delivers far outweigh this rather minor problem. As any expert will tell you – the more Chip RAM you've got, the better!
b) Yes, all three products work perfectly under 2.04. ***JH***

NIGHTBREED NIGHTMARE

Being a newcomer to the Amiga I wonder if you can explain why games software (such as *Nightbreed*) works on some A500 Pluses and not on mine. I am experiencing errors such as: "Software failure Error 8000 0004 Task 0007FFC6."

I thought my machine was at fault so I tried *Robocop 3* on three other machines: two worked, the third reacted like mine.

Steve Cairncross
Epsom

Games? Games! This is *Amiga Shopper* my boy! However, in the spirit of helping the uninitiated into the finer side of the Amiga I'll attempt to explain.

Not all software was developed with the Amiga 3000 (the forerunner to the Amiga 500 Plus) in mind. To this end, programmers, assuming that an A500 Plus machine would never materialise (helped by official denials from Commodore) wrote for the now discontinued 1.3 A500.

There's a queer thing with Amigas – custom hardware. Commodore guarantees certain things will always work provided you play exactly by the rules. On the early machines you could break the rules (not necessarily on purpose) and get away scot free. On later machines this is not always the case. A trick you pulled on the A500's hardware might, and probably will, do something rather odd on a new machine – one with revised hardware. (Interestingly, this could happen on the old models too but it was relatively rare.)

Usually this means the machine will crash showing an error like the one you experienced – this was the 68000 bitching over something technical. The problem seems to be some software bugs only affect some batches of hardware – usually a chip called Agnus. You'll hear much more of her and her sisters, Denise and Paula and brother Gary, as you read more of this machine. Sadly, for the moment these problems will plague games players for some time. ***MS***

DTP CONCERNS

I have been considering upgrading my system for DTP work. Is the new ECS Denise chip a plug in replacement so that an upgrade to Workbench 2.04 will allow me to use the new screen modes with a multisync monitor?

Regarding the multisync, do all multisyncs work with all Amiga screen modes? If not, which multisyncs are available that will also display standard screen modes such as low and medium resolution? Which do you recommend?

Is Productivity mode acceptable for DTP work or will I have to use a Flicker Fixer and an interlaced screen mode? Which flicker fixer card would you recommend for my Checkmate A1500 system?

Malcom Gallon
Stonehaven
Scotland

Providing that your machine already has the ECS Agnus chip installed, the new Denise chip is a direct plug in replacement. If you don't have the ECS Agnus though, you will have to buy this also to be able to take advantage of the new ECS screen modes.

As far as I'm aware, the vast majority of multisyncs will display both the new ECS and standard Amiga screen modes. I've used multisyncs from Citizen, NEC and Taxan and all of these seemed to work fine.

To be able to run a DTP program such as *PageStream* in Productivity mode, the software must be either especially written to address the new screen mode or it must be possible to run the program on the Workbench screen. *PageStream* can be run on the Workbench, so you shouldn't encounter any problems. For *ProPage* users though, the only option is to buy yourself a Flicker card. For some reason known only to Gold Disk, the program doesn't yet support the new ECS screen modes. Unfortunately, only one flicker fixer is currently available for the A500 – the ICD Flicker card. MicroWay is supposedly planning an A500 flicker fixer but (as far as I'm aware) it still hasn't arrived. ***JH***

SORTING IT OUT

I have *Lattice C 4.01* and find the built in sorting routines very useful. However I really need to do two things: Firstly, sort the data in descending rather than ascending order. Secondly, sort secondary data within a primary key. Can I use the built-in routines or is there a QSORT listing (with arguments) that I can use?

Steven Doswell
Norwich

Lattice provides a number of quicksort routines each designed to handle specific types of objects (integers, strings and so on). With these there is nothing that you can do to either alter the sorting order arrangements or add additional element switching code.

I would have thought however that, for most purposes, the easiest thing to do would be to carry out the usual ascending sort but, when you come to use the final sorted array (which would be in ascending order) read the array backwards.

There is however a more general data-array orientated quicksort routine, called qsort, present in the

Lattice set and this does allow you to specify your own element comparison routine. The function takes this form:

```
qsort (a, n, size, compare)
```

where the required types are:

```
char *a;   pointer to a data array
int n;     number of elements
int size;  size of elements in bytes
```

and

```
int (*compare)();
```

which is a pointer to the comparison function.

The comparison routine has to compare two elements, which I've called a and b in the example code, and send back a flag (0, -1 or +1) to indicate whether element a is equal to, less than or greater than element b. By including a routine which sends back the opposite flag value it is possible to cause the qsort routine to sort items into descending order.

You will need to be careful with your pointer declarations and the exact code needed in the comparison routine will depend on the type of data actually being sorted. The example listing uses qsort to ascendingly sort an array of strings (via their pointers) using comparison routines based on the strcmp() function. The example first sorts the elements into ascending order, and then re-sorts into descending order by inverting the return value of the strcmp() function.

This approach would, incidentally, enable you to do your secondary sorting very easily. All you have to do is monitor the value that is to be returned from the comparison and, prior to returning, arrange to switch the appropriate secondary elements from within the comparison routine itself!

If you do want to write your own specialist sort routine you'll find that most books on algorithms discuss both the quicksort and other sorting routines in great detail. *Algorithms*, by Robert Sedwick (published by Addison Wesley) might be a good place to start.

```
/* descending qsort example ↵
*/
/* some includes... */
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
/* some prototypes... */
int AscendingCompare(char ↵
**, char **);
int DescendingCompare(char ↵
**, char **);
void ShowData(void);
/* some defines... */
#define SIZE 5
/* some global data... */
char *a[SIZE] = { /* 5 ↵
elements */
    "banana",
    "apple",
    "grapefruit",
    "orange",
    "cherry"
};

main()
{
/* show original data ↵
set... */
ShowData();
/* sort the addresses into ↵
ascending order and display ↵
*/
qsort((char *)a, SIZE, ↵
sizeof(char *), ↵
AscendingCompare);
ShowData();
/* now sort the addresses ↵
into descending order and ↵
display */
qsort((char *)a, SIZE, ↵
sizeof(char *), ↵
DescendingCompare);
ShowData();
} /* end of main() */

/* a string comparison ↵
routine that provides ↵
return values which give ↵
the usual ascending sort */
int AscendingCompare(char ↵
**a, char **b)
{
return(strcmp(*a,*b));
}
/* a string comparison ↵
routine that provides ↵
return values which give a ↵
descending sort */
int DescendingCompare(char ↵
**a, char **b)
{
return(-strcmp(*a,*b));
}
void ShowData(void)
{
int i;
for (i=0;i<5;i++) ↵
printf("%s\n",a[i]);
printf("\n");
}
```

PAO

RUNNING BOARD

How do I set up, and run a BBS? I tried ordering a PD package, and ended up with VT100, which mind boggled me so I wiped it. I know PD BBSs can be good, but which one would be adequate for me, bearing in mind it is possible to use two floppies temporarily

Simon Cannin
Marlow
Bucks

To put it extremely briefly, buy next month's *Amiga Shopper*. We'll be starting a series on how to set up your own BBS and detailing what software to use. For now though, you have a several of options. There are three main BBS systems in the public domain – *SoftSpan* (Fish 374), *TagBBS* (Fish 66) and *BBS* (Fish 30). I would take a look at all three of these, and see which one suits you best, although if you have to go with one try *SoftSpan* – it's the newest and easiest to use. Any BBS software will probably require you to mess around with the CLI though, so be prepared to get your hands dirty!

Any good PD company should be able to supply you with these and it's worth checking to see if there is a newer version available. ***PH***

PAGESTREAM PROBLEMS

As a newcomer to computing I have concluded that all articles in computer magazines start half way through. I read several reviews before I bought *PageStream 2.1* and some problems that I have had were not considered worthy of mention in any of them, nor in the manual.

To start with, the screen flickered like mad when I first booted the program. In the end I accidentally stumbled across the word 'interlace', just before I was committed to an asylum, and have now resolved this.

Then there's the text editor. I am a three-words-a-minute man, yet I can still type faster than the screen displays the words. And as for moving the cursor to correct an error, it takes for ever.

Even then the words on the screen are unreadable, only about half of each letter seems to be displayed. Is this because I had the temerity to switch interlace off and am now being punished for it? If I view the page in 200% magnification I can just about make them out, but the screen has to refresh very frequently, and again the minutes roll by.

So is the choice between: (a) a word processor (such as *ProWrite*, for example) and jaggy awful printouts with large fonts, and (b) a DTP program (such as *PageStream* for example) with excellent printouts but too slow to be practical to produce a document.

Would more memory help, or do I need a million pound accelerator?

A Vesty
Crowmarsh
Oxon

You plainly never read my review of *PageStream 2.1* (in issue 2) in which I said "despite numerous improvements *PageStream 2.1*'s lack of speed is still a millstone around its neck" and "you tend to spend an awful lot of time drumming your fingers."

Anyway, you've got it now, so let's see if we can't help you to use it more productively. Firstly, I hope you sent off your registration card because the *PageStream 2.2* upgrade is out now, and it's a lot quicker than 2.1. But it's still quite slow at text entry, and that's because it's a desktop publishing program, not a word processor.

What you need to do is prepare your text in a word processor - such as *ProWrite* if that's what you own, but there are cheaper ones that will do just as well – save it to disk and then import it into *PageStream* when it is ready to be laid out. The text editing features of all desktop publishing packages are very basic because by the nature of the software they cannot operate fast enough for even slow typists.

Your text display problems are again down to the limitations of both software and hardware. At 100% magnification in non-interlace mode you will just about be able to read 12 point text, anything smaller (as you have discovered I think) will be a mess. By switching to interlace mode you double the vertical lines displayed on the screen, so the text will be more readable, but without a display enhancer and a multisync monitor (about £600 of kit) you will have to put up with the flicker.

If you turn your monitor's contrast and/or brightness down you can sometimes get rid of most of the interlace flicker while still being able to read the display, or your could try one of those 'polarised' screens that stick on to the front of the monitor – these are designed mainly to eradicate glare, and it depends very much upon the individual as to what extent they reduce flicker because each person's eyes are different.

Incidentally, I distinctly remember reading a review of *PageStream 2.1* in which the author complained that the program *only* ran in this flickery interlace mode (he was wrong of course), so that must have been another review you didn't read. ***JW***

MASTERING ICONS

What product do I need to produce both document icons and associated ASCII information of the type found on Fred Fish disks? I see that the

document icons that Fred uses point to *MuchMore*. I have *PPMore* and *More*, but neither allows you to save a document out complete with an icon. Furthermore, if I load the icon into *IconEdit*, I can't make sense of it – is it compressed in some way?

John Shelton
Twickenham
London

To create a document that can be viewed from the Workbench, you'll basically need two different programs – a text viewing utility (both *PPMore* and *More* will do the job perfectly well) and a text editor. First of all, you'll need to create your text file using a text editor like the *MEmacs* editor on your Extras disk. Once saved off to disk, you'll have a text file but no icon.

The next step is to create the icon for your text file. The easiest way is to simply copy the icon file for a document from the Fish disks across onto your work disk and then rename it so that it points at your text file. If your text file was called 'John', you would therefore have to rename the icon file to 'John.info'.

Finally, you need a tool to view the text file when the user doubles clicks on its icon. As the Fish document icon is already set to load a program called *MuchMore*, your best bet is to simply copy *MuchMore* across from the same disk that you copied the icon from and onto your work disk. Once all this is done, you're in business! ***JH***

NEED FOR SPEED



I have difficulty with upload speeds, approx 1200cps. The download speed is 1650cps. I have tried various settings given to me by other users to no avail. Can you help?

Gary Blair
Glasgow

Upload speeds will depend on several things: the quality of the telephone line, the type of protocol you are using, the speed of the hard drive at the other end, and if V42bis compression is turned on, the type of file. Archived files will upload much slower than unarchived text files.

As for changing the settings, the default configuration obtained using AT&F0 or something similar will usually be the optimal setting so give that a try and see if it makes any difference. Check to see if your cable has all the correct pins connected, some cables aren't connected at all the right points. The manual that came with the modem should give you all the pins, there are usually about seven.

Finally, try using RTS/CTS handshaking or turning handshaking off completely. ***PH***

APRICOT MONITOR



Could you tell me if it is possible to connect an Apricot 12-HRM monitor to my Amiga 500? It's 220-240V, 50Hz, and there is a cable from the monitor with red, green, blue and yellow single wires and a grey and bare dual wire (which I presume is sync and ground).

If this is possible please print the pin numbers to solder onto a 23 pin D connector.

BA Cawthorne
Dereham
Norfolk

Thanks to Apricot Technical Support for the following:

The 12-HRM CAN be used with your Amiga as it has a horizontal frequency of 15.79KHz, so it's close enough to the standard 15.6KHz Amiga output to make no difference. The only problem is that it is composite video only – it's not an RGB monitor. Here are the pin connections for you:

1 +12 Volts
2 Not used
3 0 volts
4 Horizontal Sync
5 Vertical Sync
6 Frame Ground
7 Not used
8 Ground
9 Video Input

In order to use it though you'll either have to use the video output phono on the back of your Amiga 500 (which is black and white only) or buy a device which will convert RGB to composite video. A modulator should be capable of this. Note, however, that the quality will not be as good as using an RGB monitor. You'll need to connect the video signal (from the pin of the phono connector) to Pin 9 of the Apricot and the outside of the phono to Pin 8 (ground). ***GW***

CRASH FACTOR



Nearly every time I use my computer for serious software, I have trouble with software failures. I have checked for viruses a number of times but I can't find any. What is causing my machine to crash? Is it because I still only have 512K of RAM?

I've also found that some parts of my Workbench disk don't work. Is it therefore worth me upgrading to Workbench 2.0? Also, I already own *DPaint 2* and I've decided to buy a more powerful paint package. Which would you recommend?

Stephen Weatherhead
Leominster, Herefordshire

Running serious software on a machine with just 512K of RAM can cause the Amiga to guru, simply because the machine runs out of memory all too quickly. If you claim that the machine works fine when running other not so memory intensive applications, then I'd strongly advise you to buy yourself at least a 512K RAM expansion. These days, 512K RAM expansions can be picked up for as little as £25, so do yourself a favour and upgrade now.

Upgrading to 2.0 just because your Workbench disk doesn't work is a rather extreme way of getting a new disk. If you're happy working with 1.3, then why not just get a copy of Workbench from a friend. Failing that, contact Commodore on ☎ 0628 770088 and the company will be more than happy to send you a replacement disk.

If you've got a genuine reason for wanting to upgrade to 2.0, it's going to cost you £80. This includes the price of the new 512K Kickstart ROM and three disks. Don't forget though, you really need at least a Mb to run Workbench 2.0! Paint package wise, you won't go far wrong with *DPaint 4*. ***JH***

LC HAMMER RAP



My Star LC-200 colour printer refuses to print in colour. It prints black OK whether I have a colour ribbon in or not, but when I try to get it to print in colour it makes this awful hammering noise, emits a long beep and stops as if there was no paper left.

It can't be my Amiga because it does the same thing in its short and long test modes.

What am I doing wrong? Or is there something wrong with my printer?

R Longworth
Blackpool
Lancashire

Yes, it sounds like a very sick Star to me. I suggest you phone Star Technical Help ☎ 0494 471111 for further advice. ***JW***

PASCAL POSTPONED



I recently bought the Fred Fish disk *PCQ* Pascal compiler. The editor and compiler is packed with *lharc* into six files. *Lharc* is included on the disk (in the c: directory) but I can't open a CLI window for the disk so how do I get *lharc* to unpack the files?

Michael Hanafin
Co Kerry
Ireland

The first thing you need to do is boot up from your Workbench disk and open a CLI/Shell window. Having done that you've got to execute the *lharc* program and since you only have a single drive machine the unpacking process is a little bit more complicated than it would otherwise have been.

The best idea is to copy the commands 'copy' and 'dir' (and any other commands you think you will use) from your Workbench disk to the RAM disk and then make the RAM disk the current directory (using the cd ram: command). Having done that you'll be able to take out the Workbench disk, insert the *PCQ* disk, and then copy *lharc and* the archived files to ram:.

You'll then be able to insert your destination disk and de-archive the files that you've placed in the RAM disk. To de-archive the file source.lzh, for example, you could use the command:

```
lharc -x -a -m e source.lzh ↵
df0:
```

The switches and flags used in the above example are just a few of the *lharc* options available program. Type 'lharc ?' for a full list of the options. ***PAO***

SPEED FREAK



I am interested in purchasing an accelerator to generally speed up my machine – faster Workbench, faster compilations (I use *Lattice C*) etc. I can just about afford the MicroBotics VXL30 25MHz board, but could possibly stretch to a maths co-processor and extra memory at a much later date.

If I buy the card, will it be compatible with my existing kit (I have a 2.0-based B2000 with a 2091 controller and an AT Bridgeboard)? Also, what sort of speed increase can I expect to receive from the bare board/board plus co-processor? Finally, is the MicroBotics card a good buy or should I look elsewhere? I not that Silica is selling the Commodore 2620 card for just £400!

L Hellawell
Bradford
Yorkshire

As far as I'm aware, the VXL30 is fully compatible with both the A2091 controller and the AT Bridgeboard. Commodore's earlier controller card the 2090A and the XT Bridgeboard did have problems with processor cards, but you shouldn't encounter any problems with the kit that you have.

To be perfectly honest, all 32-bit processor cards are pretty useless

continued on page 66

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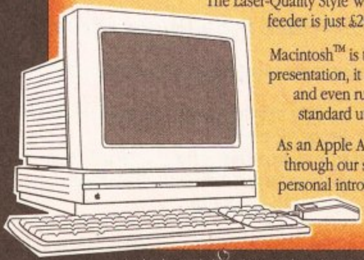
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POWERPLAY — MEGA 31* — MONITOR AND PRINTER PACK 3 — PACK THREE

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That's right you get the fantastic Amiga & **ALL THE EXTRAS** detailed in Harwoods "Mega 31*" Games Pack 1 (far left) AND... then you also get...

THE SUPERB PHILIPS CM8833/II STEREOCOLOUR MONITOR

Our monitor section on page 6 gives full details for your choice of Philips Monitors & Monitor TV's

Plus...

THE SUPER STAR LC 200 COLOUR PRINTER...

OR...YOU CAN CHOOSE A PHILIPS MONITOR TV AT NO EXTRA COST! See page 6 for FULL details of this remarkable Fast Text Monitor TV

Featuring... 185/40 cps, Full Colour 9 Pin NLQ Dot Matrix Printer with a FREE Dust Cover and cable to your Amiga. *(See printer panel for details)*

IF YOU WISH, REPLACE THE LC200 WITH A CITIZEN SWIFT 9 COLOUR AT NO EXTRA COST!!! OR... IF YOU PREFER A 24PIN COLOUR PRINTER, JUST CHOOSE FROM OUR RANGE & ADD THE DIFFERENCE IN PRICE BETWEEN STARS LC200 & 'YOUR CHOICE'. (eg. Citizen 224, add just £50)

£829.95 Including VAT

POWERPRO — CARTOON CLASSICS — POWERPRO PROFESSIONAL PACK

"IT'S THE-BUSINESS"

A TRULY PROFESSIONAL PACKAGE SPECIFICALLY FOR THE BUSINESS MINDED AMIGA USER. THIS ONE SHOULD FULFILL EVERY AREA OF HOME BUSINESS YOU'RE LIKELY TO NEED!

THE BUSINESS PACK FROM HARWOODS INCLUDES ALL THE FOLLOWING...

AMIGA 500 PLUS WITH 1Mb. MEMORY
+
PHILIPS CM 8833/II STEREO COLOUR MONITOR
See Monitor Panel on Page 6 for Details
+
STAR LC200 9 PIN NLQ FULL COLOUR PRINTER
See Printer Panel on Page 5 for Details
+
A HOST OF BUSINESS SOFTWARE & ACCESSORIES...
PEN PAL V1.3 (Word Processor)...1Mb.
SUPERBASE II PERSONAL (Database)
SUPERPLAN (Spreadsheet)...1Mb.
+
A GREAT TEN GAMES PACKAGE
Datastorm, Drivin' Force, Pipe Mania, Dungeon Quest, Rock-N-Roll, E-Motion, Tower of Babel, Skweek, RVF Honda, and Grand Monster Slam.

OR...YOU CAN CHOOSE A PHILIPS MONITOR TV AT NO EXTRA COST! See page 6 for FULL details of this remarkable Fast Text Monitor TV

BUY AN AMIGA WITH 2Mb FOR ONLY £40 EXTRA!!! (ie. 1Mb RAM Expansion included)

IF YOU WISH, REPLACE THE LC200 WITH A CITIZEN SWIFT 9 COLOUR AT NO EXTRA COST!!! OR... IF YOU PREFER A 24PIN COLOUR PRINTER, JUST CHOOSE FROM OUR RANGE & ADD THE DIFFERENCE IN PRICE BETWEEN STARS LC200 & 'YOUR CHOICE'. (eg. Citizen 224, add just £50)

Plus...

- ☆ THE SIMPSONS
- ☆ CAPTAIN PLANET
- ☆ LEMMINGS
- ☆ DELUXE PAINT III Now with ANIMATION
- ☆ MICROSWITCHED JOYSTICK
- ☆ 10 BLANK 3.5" DISKS
- ☆ DISK LIBRARY CASE
- ☆ MOUSE MAT
- ☆ 3 TAILORED DUST COVERS

ADD A CUMANA CAX 354 SECOND DRIVE FOR JUST £50 TO HELP RUN THOSE BUSINESS PACKS MORE EFFICIENTLY

WE MEAN BUSINESS AT A GREAT PACKAGE PRICE OF JUST...

£899.95 Including VAT

EDUCATION — LESSON A — PACK A

HARWOODS LEARN & PLAY

PRIMARY & JUNIOR PACK A

Get your children off to the right computing start with this software learn and play Compendium 6 pack...

KIDS TYPE, WEATHER WATCHER, CALENDAR QUIZ, WORDS & NUMBERS, GAME SET & MATCH, WHAT IS IT ?- WHERE IS IT?

Active, enquiring young minds will love the fun of these six entertaining but educational titles. Your children probably won't even realise that their "lessons" have begun!!!.

HOMEBASE

Ideal home storage system. Keep household lists, student records etc. Easy to use "push button" controls.

PRIMARY MATHS COURSE

Around 24 modules in this course from 3 yrs old right up to secondary level. Follows N.C.

READING & WRITING COURSE

24 module course. Teaching from the computer and books. For early starters & the dyslexic.

A GREAT EDUCTIONAL PACK FOR YOUR CHILDREN AT A FRACTION OF THE NORMAL COST

£69.95 Including VAT

EDUCATION — LESSON B — PACK B

HARWOODS LEARN & PLAY

GCSE/'O' LEVEL PACK B

GCSE examination level studies on your Amiga computer that's fun!

MICRO ENGLISH, MICRO FRENCH AND MICRO MATHS

A set of three complete self-tuition courses to GCSE level which can also be used for revision work. All programs adhere to the National Curriculum and were designed and tested in schools by professional teachers. Micro French includes "real speech" to help your accent!

PEN PAL- Graphical Word Processor

A fantastic word processor with all the tools you'll need to create effective written work. Ideal for home work, projects etc. or for the families letters. Text wraps automatically around graphics, even as you type! Includes a built-in database and Forms Manager.

HOMEBASE

Homebase is the ideal information storage program for things like household lists, student notes, and children's educational projects. Inc. clearly labelled "push button" controls and clear comprehensive reference manuals.

A GREAT EDUCTIONAL PACK FOR YOUR CHILDREN AT A FRACTION OF THE NORMAL COST

£89.95 Including VAT

Enquiries & Order Line: **0773 836781**

Finance Facilities Available*
Please phone us for information and your personal application pack.

VISA · Access · Switch

GORDON HARWOOD HARWOOD HARWOOD Computers
ALFRETON DERBYSHIRE

The Closer you look, The Better we look.

Finance terms are available (subject to status) for most products: please see our ordering panel at the end of this advert for full details

SOUND AND VISION
Words and Pictures
CDTV



IMAGINE, IF YOU CAN, THE CONCEPT OF A NEW, MORE POWERFUL AMIGA...

...WITH 1 MEGABYTE OF MEMORY, AND A COMPACT DISK DRIVE OF ALMOST INFINITE SIZE. A DISK DRIVE SO VAST, IT CAN STORE HUNDREDS OF MILLIONS OF DIGITS OF DATA. THIS DATA COULD BE, SPEECH, ANIMATED PICTURES, DIGITISED STEREO SOUND, COMPUTER IMAGES OR WHOLE ENCYCLOPAEDIAS.... AND MORE.

IMAGINE THIS, AND YOU CAN START TO GRASP THE CONCEPT OF CDTV.

THE INTEGRAL COMPACT DISK DRIVE, IS THE KEY TO THE POWER OF CDTV. ITS STORAGE CAPACITY IS EQUIVALENT TO AROUND A QUARTER OF A MILLION FULL PAGES OF TEXT. THIS WHEN INTEGRATED WITH THE 1 MB OF INTERNAL AMIGA CIRCUITRY, CREATES A SYSTEM, WHICH FROM A CD DISK, CAN GIVE YOU ACCESS TO AN UNIMAGINABLE SPECTRUM OF REAL WORLD IMAGES, NEVER SEEN COMBINED BEFORE. THESE VIVID IMAGES, WITH WORDS AND SOUNDS, GIVE YOU A WHOLE NEW DIMENSION IN HOME EDUCATION, ENTERTAINMENT & INFORMATION TECHNOLOGY. AND... DON'T FORGET, THAT CDTV CAN PLAY IN SUPERB QUALITY, ANY NORMAL AUDIO MUSIC CD, AND IT CAN ALSO PLAY THE NEW CD+G DISKS, WHICH GIVE DIGITAL SOUND AND ON SCREEN GRAPHICS.

ON CD DISKS NOW AVAILABLE, THERE ARE EDUCATIONAL PACKAGES, ENCYCLOPAEDIAS PACKED WITH REFERENCE INFORMATION, STUNNING GAMES, MUSIC SYSTEMS AND MANY OTHER NEW AND VARIED SUBJECTS, INCLUDING WHOLE WORLD ATLASES OR EVEN THE COMPLETE WORKS OF SHAKESPEARE, EACH ON ONE CD DISK!!! **CDTV - NOTHING LESS THAN REVOLUTIONARY**

FREE CDTV STARTER PACK!!!

WHEN YOU CHOOSE YOUR CDTV FROM GORDON HARWOOD, NOT ONLY DO YOU GET OUR LEGENDARY SERVICE, BUT WE GIVE YOU A CDTV STARTER PACK, TO GET YOU EXPLORING YOUR NEW WORLD - STRAIGHTAWAY. THIS INCLUDES A SUPERB SELECTION OF CD DISK TITLES INCLUDING THE WELCOME TUTORIAL & HUTCHINSONS ENCYCLOPAEDIA, PLUS ... FIVE GAMES, SHERLOCK HOLMES & THE HOUND OF THE BASKERVILLES, SIM CITY, CHAOS IN ANDROMEDA, A TOWN WITH NO NAME, AND THE ACCLAIMED LEMMINGS, WORTH IN TOTAL ALMOST £200.00. IN ADDITION IS THE INFRARED REMOTE CONTROLLER, AND ALL THE HARDWARE NEEDED TO GET YOU CONNECTED.

ALL THIS FOR JUST £499.95

CDTV IS THE SAME SIZE AND STYLE AS MOST VIDEO RECORDERS, SO IT CAN SIT UNOBTRUSIVELY ABOVE OR BELOW YOUR HOME TV AND/OR HI-FI. AND WITH ITS INFRARED REMOTE CONTROLLER, IT CAN BE OPERATED FROM YOUR ARMCHAIR. BUT PERHAPS MOST IMPORTANTLY, IF YOU ARE A COMPUTER ENTHUSIAST, REMEMBER THAT INSIDE EVERY CDTV, IS AN AMIGA, JUST WAITING TO BE USED. SO LATER ON, YOU'LL BE ABLE TO BUY THE OPTIONAL KEYBOARD AND DISK DRIVE, TO GET INTO THE WORLD OF AMIGA COMPUTING. PRINTERS, DIGITISERS, GENLOCKS AND OTHER ACCESSORIES,CAN ALL BE CONNECTED TO GIVE ACCESS TO MANY OTHER EXCITING FACILITIES, AND ALSO MANY OF THE EXISTING SOFTWARE PACKAGES AVAILABLE FOR THE AMIGA COMPUTER. NEVER BEFORE HAS THERE BEEN SO MUCH POTENTIAL FROM ONE NEW STUNNING SYSTEM, PACKED WITH

TODAYS TECHNOLOGY.!

CALL IN AND SEE US FOR YOUR PERSONAL DEMONSTRATION, OR PHONE US FOR YOUR FREE DETAILED CDTV INFORMATION PACK.

CDTV ACCESSORIES

Please call for latest availability.

CD 1220 KEYBOARD	AN 89 KEY QWERTY KEYBOARD	£49.95
CD 1252 MOUSE	INFRARED MOUSE WITH BATTERY SAVER.	£49.95
CD 1200 TRACKBALL	INFRARED TRACKBALL, WITH THE OPTION OF DIRECT CONNECTION TO EXTEND BATTERY LIFE. DUPLICATES FUNCTIONS OF 2 BUTTON MOUSE & INCLUDES TWO 9 PIN PORTS FOR STD. JOYSTICKS	£79.95
CD 1400 CADDY	FOR HOLDING CD WITHIN DRIVE	£9.95
CD 1401 MEMORY CARD	PERSONAL RAM CARD CONTAINING 64K OF MEMORY FOR STORING DATA OR AS A BOOKMARK FACILITY WITHIN CDTV	£79.95
CD 1405 MEMORY CARD	A LARGER PERSONAL RAM CARD CONTAINING 512K OF MEMORY FOR STORING DATA OR AS A BOOKMARK FACILITY WITHIN CDTV	£249.95
CBM FLOPPY DRIVE	3.5" FLOPPY DRIVE WITH 880K CAPACITY. MATCHING BLACK FINISH . SUPPLIED WITH AMIGA WORKBENCH DISKS/MANUALS etc.	£99.95
CD 1301 GENLOCK	PAL BASED VIDEO INTERFACE CARD FOR SUPERIMPOSING CDTV IMAGES OVER A VIDEO SIGNAL PROVIDED BY ANY STANDARD VIDEO SOURCE	£149.95
ROCLITE 3.5" DRIVE	CDTV COMPATIBLE AND STYLED IN MATCHING BLACK.	£69.95

Many Amiga Accessories & Peripherals (e.g. Printers, Disk Drives, Software etc.) are compatible with CDTV. Please phone us for compatability information.

HARWOODS AMIGA
PRO-GEN
NEW LOWER PRICE



PROFESSIONAL QUALITY GENLOCK FOR COMPUTER AND VIDEO MIXING, AT A DOWN TO EARTH PRICE!!!

Please note the above photograph shows Spectracolor which has now been replaced by Photon Paint 2.0

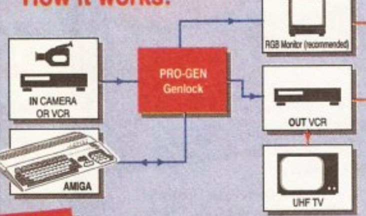
PRO-GEN Amiga Genlock

The Pro-gen AMIGA Genlock allows you to mix your Amiga display with any PAL video signal whether it is from a VCR, Laserdisk player or a Camcorder. In fact any item of video equipment which outputs a PAL composite video signal.Combined with the Amiga computer the Pro-Gen gives you the facilities of a special effects & video titling suite. Take your own films & give them a professional look by OVERLAYING TITLES or by SUPER IMPOSING YOUR OWN GRAPHICS created in packages like Photon Paint 2.0 or Deluxe Paint. Pro-Gen is supplied with micro illusions superb Photon Paint 2.0 package.

FREE Photon Paint 2.0 Software

A powerful Lo-and-Hi resolution hold and modify (HAM) paint program, with overscan (NTSC/PAL) and special effects for your Amiga Computer including all the following... **Contour Mapping:** drapes a brush over a 3D "landscape". Pixel intensity values decide the peaks and valleys, while a specially developed ray-tracing algorithm maps the image precisely. **Surface Mapping:** around 3D objects, both geometric and free hand drawn. **Luminance:** sets the light source and intensity. **Shadowing**: automatically with control of size and offset. **Brush Control:** twist, tilt, resize, flip, rotate, bend, adjustable transparency, stretch etc etc. PLUS LOTS MORE! A great program allowing use of 4096 colours. Choice of horiz/vert page print, negatives, anti-aliasing, dithered print, adjustable brihgtness etc.

How it works:



STOP PRESS

PRO-GEN... NOW INCLUDES A VERY VERSATILE MULTI COMPONENT VIDEO TO GENLOCK CONNECTING CABLE KIT. THIS ALLOWS PRO-GEN TO BE USED STRAIGHTAWAY WITH MOST POPULAR VIDEO EQUIPMENT, WITHOUT THE NEED TO HUNT DOWN THE CORRECT CONNECTING CABLES. THIS KIT CAN ALSO BE USED TO CONNECT IN OTHER WAYS... eg. VCR TO VCR etc.
A KIT TO START YOU OFF RIGHT FROM THE MOMENT YOU OPEN THE BOX!!!

NEW LOWER PRICE

PRO-GEN with Photon Paint 2.0 ONLY £99.95

Mode Switch-box for Genlocks

Features Include
- -Compatible With The Pro-Gen And Rendale 8802
- -Supplied With Genlock Extender Cable Worth £9.95
- -Switch-box Switches Between Foreground, Background, Video And Computer Modes.

£29.95

**Finance terms are available (subject to status) for most products: please see our ordering panel at the end of this advert for full details*

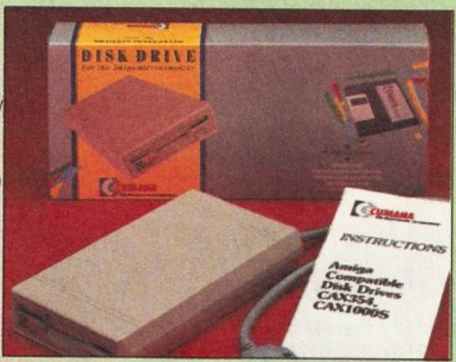
AMIGA DRIVES & MEMORY

Cumana CAX354 3.5" External 2nd Disk Drive.

- ☆ Features Include
- ☆ Long connecting cable
- ☆ 1Mb, (880K Formatted) Capacity
- ☆ Enable/Disable Switch,
- ☆ Throughport
- ☆ Access Light
- ☆ Compatible with Amiga500/1000 1500/2000/3000 and CDTV

NOW SUPPLIED WITH A FREE 3.5" Disk Head Cleaner to maintain your new drive in 'tip-top' condition.

£57.95



GVP 52-420Mb HARD DISK DRIVES WITH MEMORY EXPANSIONS OF UP TO 8Mb.

- ☆ Capacities of 52 to420Mb
- ☆ Connects to sidecar bus on L/H side of A500/A500 Plus
- ☆ Autoboots with Kickstart 1.3/2.0, boot enable/disable switch
- ☆ Sockets for up to 8 Mb of RAM
- ☆ SCSI Port allows up to 7 other devices to be connected
- ☆ Supplied with easy to use software
- ☆ 2 Year Warranty ☆ Dedicated PSU
- ☆ Mini slot for future expansion
- ☆ PC-AT Emulator planned to be available for 1992

GVP AMIGA A500 HARD DRIVES

RAM SIZE	CAPACITY 52Mb.	120Mb.	240Mb.
0Mb.	£349.95	£519.95	£729.95
2Mb.	£419.95	£589.95	£799.95
4Mb.	£489.95	£659.95	£869.95
8Mb.	£629.95	£799.95	£999.95

GVP AMIGA 1500/2000 HARD DRIVES

RAM SIZE	CAPACITY 52Mb.	120Mb.	240Mb.	420Mb.
0Mb.	£289.95	£409.95	£639.95	£1169.95
2Mb.	£359.95	£479.95	£709.95	£1239.95
4Mb.	£429.95	£549.95	£779.95	£1309.95
8Mb.	£559.95	£679.95	£899.95	£1429.95

CALL FOR MEMORY UPGRADE PRICES IF YOU ALREADY ARE A GVP OWNER!

EDUCATION SOFTWARE

DON'T JUST PLAY GAMES WHEN YOU CAN LEARN WITH YOUR AMIGA TOO!

MICRO MATHS - 24 easy to use programs for GCSE ('O' Level) revision or self tuition **£18.95**

MEGA MATHS - A 9 level step by step tuition course. For mature beginners, 'A' Level studies & Micro Maths users **£20.95**

MICRO FRENCH - GCSE French tuition or revision course. Covers both spoken & written French **£18.95**

MICRO ENGLISH - Complete self-tuition programe to GCSE level. **£18.95**

PRIMARY MATHS - Ages 3 to 12, Complete 24 Prog. Course. **£18.95**

SPELL BOOK - Ages 4 to 6, Developed with the help of a Primary School Head Teacher to aid spelling skills. **£17.95**

HOMEBASE - Home storage prog., ideal for those household lists, childrens educational projects, student notes etc. Easy to use "Push Button" controls and a extensive reference manual. **£19.95**

COMPENDIUM SIX PACK- 6 Great Educational Progs. for children aged 4-12years of age. Each is designed to keep your childs interest whilst they learn. **KIDS TYPE** - Large characters & colurful graphics helps creation of stories. **WEATHER WATCHER** - Collect & analyse data using graphs etc. even animate your own weather map! **CALENDAR QUIZ** - Quiz based learning of time related events. **WORDS AND NUMBERS** - Put words & scentences in the correct order or group numbers. **GAME, SET & MATCH** - Early learning of shapes colours, numbers, coins, sequences and including a "reaction timer". **WHAT IS IT? WHERE IS IT?** - Learn names & locations of British counties. **£29.95**

HARWOODS AMIGA 1Mb PRO-RAM PLUS

ADD MORE POWER TO YOUR AMIGA 500 PLUS WITH A FULL 1Mb. MEMORY UPGRADE!!!

- ☆ 1Mb. RAM expansion for the Amiga 500 Plus
- ☆ Gives a total of 2Mb. of RAM
- ☆ Easily fitted without any dismantling in the trapdoor expansion slot underneath Amiga. DOESN'T invalidate your warranty!
- ☆ Low power consumption ☆ 2 Yr Guarantee!

A GREAT NEW OFFER FROM HARWOODS

Only... **£44.95**

0.5 Mb PRO-RAM

- ☆ Compatible with Amiga A500 and 500 Plus
- ☆ Gives A500 a total of 1Mb Memory + Clock
- ☆ Gives 500 Plus a total of 1.5Mb Memory

Only... **£29.95**

AMIGA SOFTWARE

Music-X: The ultimate software for professional MIDI sequencing. The software includes a configurable librarian and a synthesiser patch editor. All you need to recreate a song can be recalled from one performance file including sequences, MIDI routing, sync setup, keyboard maps & synthesiser or drum machine patch libraries. **NEW LOW PRICES - £49.95 or just £69.95 with midi-interface!**

MIDI INTERFACE (5 Port): In, Out, Through plus 2 switchable thru'/out. Inc. 2 cables. **£24.95**

AMOS: AMOS allows you to access the power of the Amiga with ease. 500 different commands make AMOS a sophisticated development language. The AMOS animation language allows you to create complex animation sequences. 300 page manual and over 80 example programs **£49.95**

Amos Add on Modules: (BOTH require Amos prog.)
Amos Compiler **£29.95** Amos 3D **£34.95**

BUY ALL THREE AMOS PROGRAMS FOR JUST **£89.95**

SuperBase 4: Most powerful database available for the Amiga.Combines the ease of use of Super-Base 2 with a versatile programming language so that you can tailor your data to your own specific needs for club/business/library records etc. **£229.95**

Lattice C: An ideal tool for the C programmer whether experienced or a novice. The best way to create applications for the Amiga.Fully supports Motorola chipset. Nearly 300 functions optimised to help the user write the tightest possible code. Includes screen editor. Most Amiga C books are based around lattice. (Requires either 2 floppy drives OR a hard disk drive) **£199.95**

Deluxe Paint IV: Latest version of the Amigas first, and still the best, paint and animation package, now including HAM mode. (1 Mb. minimum memory or more recommended) **£79.95**

Vidi, The Complete Colour Solution: Vidi with RGB Splitter, Frame Grabber & Digitiser. Grabs moving colour video into 16 grey scale frames (up to 16 frames in 1Mb. Amiga) and digitises from still colour video source in up to 4096 colours in less than 1 second! Requires home VCR or video camera for grabbing. Requires video camera or VCR with perfect pause for digitising. Now comes with Photon Paint 2.0 ABSOLUTELY FREE OF CHARGE!!! **£149.95**

STEREOMASTER: High quality "stereo" sampler (best for sampling instruments etc.) **£39.95**

THE ABOVE IS JUST A SMALL SAMPLE FROM OUR EXTENSIVE RANGE OF THOUSANDS OF SERIOUS, EDUCATION AND RECREATION TITLES.WE CAN'T LIST THEM ALL HERE SO PLEASE CALL US IF YOU CAN'T SEE THE PROGRAM YOU REQUIRE, IT'S PROBABLY IN STOCK!

Pen Pal V.1.3

WORD PROCESSOR/DATABASE

With Pen Pal you can mix text, 4096 colour graphics & data in ways no other w/p can! "It's handling of graphics is unsurpassed: Pen Pal is the only word processor I tested that will automatically wrap text round graphics..

Amiga World, July '90



£79.95

PEN PAL complete WITH 512K Amiga RAM Expansion ***only...£99.95!***

All our packs contain the new Amiga A500 Plus. (1.3 Amigas may still be available to special order, please enquire.)

Enquiries & Order Line:

0773 836781

Finance Facilities Available*

Please phone us for information and your personal application pack.

GORDON HARWOOD HARWOOD HARWOOD Computers

ALFRETON DERBYSHIRE

The Closer you look, The Better we look.

**Finance terms are available (subject to status) for most products; please see our ordering panel at the end of this advert for full details*

FREE... Fully Tailored Dust Cover with all Dot Matrix Printers

NEW FREE ACCESSORIES

PRINTERS

All printers in our range include a standard Centronics/Parallel Port for direct connection to Amiga, PC's, Atari ST's, Archimedes etc.

We supply a connection cable to YOUR computer plus a Quality Dust Cover with ALL Dot Matrix Printers — FREE FREE



When you are comparing our prices to others make sure that the same essential items are included eg. Printer Lead, Dust Cover, Postage and VAT etc.

GORDON HARWOOD PRINTER STARTER PACK — FREE
ALL our Dot Matrix Printers are supplied complete with...
200 Sheets of Continuous Printer Paper — FREE
100 Useful Self Adhesive Continuous Labels — FREE
Amiga Printer Drivers Disk — FREE

CITIZEN 120D+ 9 PIN MONO - Up to 120/25 cps — £149.95
- Very reliable low cost printer with interchangable interfaces for Centronics/RS232/serial type (C64 etc.)
- Full 2 Year manufacturers warranty

NEW FASTER STAR LC20 9 PIN MONO - Up to 150/38 cps — £159.95
Replacement for our most popular Mono Dot-Matrix at a super low price
- Multiple font options easily accessible from front panel
- Excellent paper handling facilities
- Simultaneous, continuous and single sheet stationery
- 240 x 240 dpi Graphics

STAR LC200 9 PIN COLOUR PRINTER - 185/40 cps — £209.95
This is the one in our packs!
- 80 Column Dot Matrix
- 240 dpi - 9 Pin COLOUR
- 16K Buffer, 8 Resident Fonts
- Push/pull tractor & rear/bottom feeds
- Reverse paper feeds
- Micro paper feed, Max. paper width 11.7"
- Supplied with colour & mono ribbons
- Paper park with auto single sheet loading
- Programmable from front panel.
- 12 month warranty

CITIZEN SWIFT 9 PIN COLOUR - 160/40cps — £214.95
New super high spec 9Pin colour printer
- 8K Buffer 4 Fonts
- Push and pull tractor built-in
- Feed for labels/multi part stationery
- 240 x 240 dpi Colour Graphics
- Best text quality in our 9Pin range
- 2 Year Citizen warranty

STAR SJ48 INKJET PRINTER — £249.95
New super high quality bubble ink jet printer
- 64 Nozzle ink jet
- Emulates Epson LQ and IBM Proprinter for full compatibility
- Complete with AC adaptor
- Large 28K Buffer
- 360 x 360 dpi near laser print quality
- Optional Ni-Cad battery for mains free operation

STAR LC24/200 24 PIN MONO - 220/55 cps — £249.95
Mono version of LC24/200 Colour, same spec except for a smaller 7K buffer

STAR LC24/200 24 PIN COLOUR - 220/55 cps — £299.95
Colour version of the LC24-200 Mono.
- 80 Column Dot Matrix
- 360 dpi - 24 Pin MONO
- 30K Buffer (expandable)
- 10 Resident Fonts
- Front Panel Pitch Selection
- Push/pull tractor & rear/bottom feeds
- Reverse paper feed
- Paper park with auto single sheet loading
- Micro paper feed, Max. paper width 11.7"
- Supplied with mono ribbon
- Faster than the old LC24-10
- Extra font cartridges available
- Program from front panel, No DIP switches
- 12 month warranty

NEW 24 Pin CITIZEN 224 COLOUR - 160/53 cps — £254.95
Brand New, lowest cost colour 24 Pin printer, anywhere!
- 80 Column Dot Matrix with 4 Fonts
- 360 dpi - 24 Pin COLOUR
- 8K Buffer expandable to 32K
- Easy to use front panel controls
- Push & pull tractor feeds
- Complete paper parking facilities.
- Supplied with mono & colour ribbons
- Full 2 Year Citizen Warranty

NEW 24 Pin CITIZEN SWIFT 24E COLOUR - 180/60 cps — £319.95
Brand New, superb specification colour 24 Pin printer.
- 80 Column Dot Matrix with 7 Fonts
- 360 dpi - 24 Pin COLOUR
- 8K Buffer expandable to 32K
- Easy to use LCD panel controls
- Push/pull & bottom tractor feeds
- Complete paper parking facilities.
- Supplied with mono & colour ribbons
- Full 2 Year Citizen Warranty

NEW FASTER STAR XB 24 PIN COLOUR RANGE XB24-200 & XB24-250 - 275/80 cps — £399.95 24-200 Colour; Wide Carriage £499.95 24-250 Colour
These NEW top of the range Stars replace the XB24/10 & XB24/15, & offer the best possible quality dot matrix printing
- Exceptional print quality
- 4 x 48Pin super letter quality fonts
- 14 x 24Pin near letter quality fonts
- Buffer: 29K(XB24/200) & 76K (XB 24/250)
- 360 x 360 dpi Colour Graphics
- 12mths on-site warranty (UK Mainland)

HEWLETT PACKARD PAINTJET COLOUR A4 INKJET — £579.95
Our best quality full colour printer at a realistic price
- Parallel/Centronics or Serial RS232 I/F (specify with order, MAC option available)
- For presentation graphics/DTP, CAD and technical/scientific applications
- A full page of colour graphics in 4 minutes (typical)
- Non impact printing, virtually silent, 43dba
- Will print transparencies
- 12 Months on-site warranty (UK Mainland)

STARSCRIPT - 4ppm POSTSCRIPT COMPATIBLE LASER — £1099.95
A4 Laser Printer, will connect to PC, Amiga, Atari ST, Macintosh etc.
- 300 DPI, 2Mb. Upgradable to 5Mb.
- Emulations inc: HP Series II, Epson EX800, IBM Proprinter & Diablo 630
- Complete with "Starscript" (Stars postscript language emulation)
- Serial and Parallel Interfaces
- 12month on site warranty (UK Mainland)
- 49 quality fonts built-in
- Appletalk for connection to Macintosh
- Every desktop publishers dream

SEE OUR LIST OF ACCESSORIES FOR BOTH STAR AND CITIZEN PRINTERS, ALL AT COMPETITIVE PRICES!

All the characters Per Second speeds quoted above are Draft/LQ at 10cpi

PRINTER ACCESSORIES

CITIZEN PRINTER ACCESSORIES:

Citizen 120D+ Sheet Feeder — £69.95
Citizen 120D+ Parallel Interface — £49.95
Citizen 120D+ CBM C64 Serial Interface — £49.95

Citizen 124D 32K Buffer — £13.95
Citizen 124D Semi-Auto SheetFeeder — £39.95
Citizen 124D Automatic Sheet Feeder — £79.95
Citizen 124D Printer Stand — £24.95

Citizen Swift 9 Semi-Auto SheetFeeder — £39.95
Citizen Swift 9 Automatic Sheet Feeder — £79.95
Citizen Swift 9 Printer Stand — £24.95

Citizen Swift 9X Printer Stand — £34.95
Citizen Swift 9X Automatic Sheet Feeder — £139.95

Citizen Swift 24 32K Printer Buffer — £13.95
Citizen Swift 24 Semi-Auto Sheet Feeder — £39.95
Citizen Swift 24 Automatic Sheet Feeder — £79.95
Citizen Swift 24 Printer Stand — £24.95

Citizen Swift 24X Auto Sheet Feeder — £139.95
Citizen Swift 24X Printer Stand — £34.95

HEWLETT PACKARD PAINTJET PRINTER ACCESSORIES:

Hewlett Packard PaintJet
Black Ink cartridge — £25.95
Colour Ink Cartridge — £31.49
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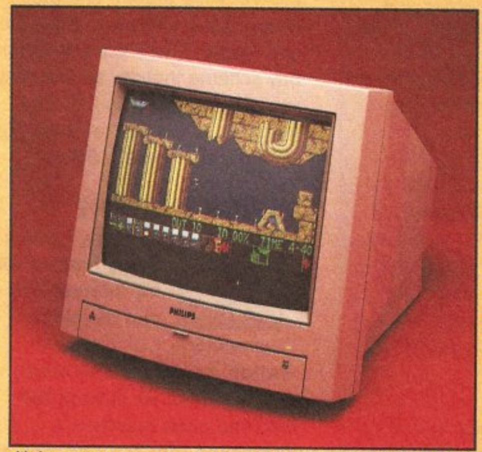
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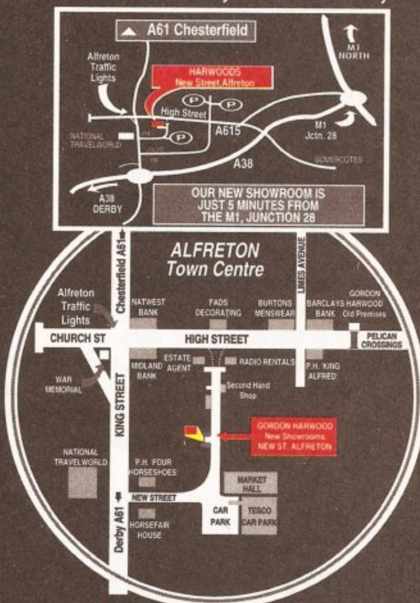
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continued from page 58

unless you buy some 32-bit RAM to use with them. If you think about it, it certainly makes sense. After all, if you try running a 32-bit processor through 16-bit RAM (the memory inside a standard Amiga is only 16-bit) it will hold the faster processor back simply because the RAM cannot run at the same speed as the processor, therefore causing a bottleneck.

If you buy some 32-bit RAM (1Mb is the recommended minimum), you should find that your machine runs considerably faster. Add a maths co-processor to this setup and your machine will turn into a veritable speed demon.

I haven't actually tried the VXL30, but I'm informed that it's a very capable processor card indeed. As for the A2620, there's just no comparison – the VXL30 is based around the 68030, whereas the A2620 is based around the (now) lowly 68020.

The 68030 runs much faster internally, so calculations will be performed much faster even if both cards were rated at the same speed. That said, the VXL30 is actually faster as standard – the A2620 runs at only 14MHz as opposed to the VXL30's 25 Mhz. That's a substantial 11MHz faster! ***JH***

WASTED LETTER



I own a 9-pin Seikosha SP-2400 mono printer and I would like to know if it is possible to upgrade to a colour one.

How much will it cost? When printing pictures, on the black parts there are noticeable black dots, stripey too. Can they be cured, or is this normal?

Hassan Ali
London E3

JARGON BUSTING • JARGON BUSTING

Modem – Device which connects to the Amiga's serial port and converts computer signals into a suitable format for transmission along a phone line. Likewise, it will convert incoming signals back into a form the computer can recognise. External modems will work with any micro computer, although it is possible to buy Amiga-specific cards to plug into the A1500 and A2000, thus keeping the serial port free for something else.

Multisync monitor – A monitor which can accept its signal at a variety of frequencies, usually ranging from 15 to 32KHz. A multisync is useful for displaying signals produced by a flicker fixer or from an IBM PC VGA card.

Startup-sequence – A program which is executed every time the Amiga is switched on and after every reset. It sets up the system so that it is usable from the Workbench, and may be customised by those who have unusual hard or software requirements.

Structured fonts – Rather than a simple bit-mapped image of each character, which grows more jagged with magnification, a structured font represents the shape of each character within the font mathematically. No information is lost if the font is scaled and the result is always smooth.

You should speak to your local Seikosha dealer about whether there's a colour kit for the SP-2400, or call Seikosha direct on ☎ 0753 685873. I'm not too sure what you mean by 'noticeable black dots, stripey too'. It would have helped if you'd sent an example printout. ***JW***

PD PROSPECTOR



I am looking for any and all PD *PageStream*-compatible structured fonts. I understand that George Thompson Services has quite a few, but I've been unable to get either a phone number or an address. Please help!

Anon

No sooner said than done. George Thompson Services can be contacted at Cucumber Hall Farm, Cucumber Lane, Essendon in Herts AL9 6JB. Alternatively, you can phone the company on ☎ 0707 664654.

Another disk worth obtaining for *PageStream* fonts is the Scope Disk 149 which is available from Digitz PD on ☎ 0709 571748. ***JH***

EASY ANSI?



I have been using *NorthC* without problems but, as *PDC* is more ANSI compatible, I decided to use this instead. However it gurus with the recoverable alert #0003805.48454c50. Details of my startup sequences and my hello.c test program, and listings of the *PDC* boot-up disk are enclosed.

David Nicol
Heathfield, East Sussex

I've also had *PDC* problems (with two separate *PDC* disks) and in the first case a track error on the archived disk resulted in a number of files (including library files) going missing. This is not so in your case but nevertheless the alert you've got is definitely an open library failure. To be honest I'm not sure what is going on but on the face of it there doesn't appear to be anything wrong with the environment settings in your startup-sequence. I've written to the authors of *PDC* to get up-to-date copies of the compiler, details of known bugs, etc. When the new material arrives I'll do some serious experimenting and, hopefully, will then be able to throw a bit more light on your problem. ***PAO***

GETTING ON-LINE



I'd like to buy a modem but I have a limited budget (£125). I've narrowed my choice down to the Amstrad SM2400 or the Supra 2400 Plus pricewise, but it's the specification which confuses me. Please help, or do you recommend something else?

What comms software do you suggest? How do I go about subscribing to Compunet/BT Gold and can I try these services before I buy?

Dominic Amor
Colchester
Essex

You seemed to have narrowed down the choices nicely. Of the two you mention the Supra 2400 Plus is an excellent modem, the advantage being that it has data compression. A disadvantage of the Amstrad is that it is non-repairable, so if it did break down once out of warranty you wouldn't be able to get it repaired.

Comms software recommendations are easy: *NComm* or *JRComm*. Both are shareware and can be easily obtained from good PD suppliers.

Which package of the two that you use depends on personal preference, so try both. Subscribing to Compunet and so on is usually done on-line by phoning the number concerned and giving your details. It is sometimes possible to try the system before subscribing, the best way to find out is to call the operators of the system concerned and ask.

To start off though I would recommend that you try CIX (☎ 081 390 1255). It's a very good conferencing system and pretty cheap, particularly with a good off-line reader. There is no try before you buy scheme though, so that may put you off. If you do join CIX, don't forget to take a look at the *Amiga Shopper* conference. ***PH***

WHICH SWITCH?



Recently I was a bit heavy handed with my internal disk drive and the black connector 'switch' inside the disk drive disintegrated. On putting the machine back together, I discovered that the switches each needed a spring (there are two switches – one for the write protect and another for the mechanism that tells the Amiga when a disk is in the drive).

Could you therefore tell me of my nearest supplier or manufacturer that will be able to supply me with the parts that I require. At the moment my Amiga seems to think that all my disks are full – even freshly formatted disks!

Phillip Baker
Ogmore Vale
Mid Glamorgan

Shame on you! – there should be laws against people like you. How could you possibly be so cruel to an innocent Amiga! Obviously the poor thing is in need of urgent mechanical help, but I'm afraid you might encounter problems buying small parts for disk drives. Fact is, most of the drives that are used in this country are manufactured in the Far East, so I'd be very surprised indeed if you could find a supplier that will sell you just a couple of springs. You could try HRS, Commodore's parts supplier. It can be contacted on ☎ 021 789 7575. ***JH***

MANUAL NEEDED



I have just been given an Epson FX-800, unfortunately no manuals. Could you please tell me the dip switch settings for SW1-8 and SW2-4, and which driver to use from my Workbench.

Does the printer have fonts of its own? If so, how do I use them? Do you have an address I can write to for a manual?

EAJ Minns
Bare
Lancs

Seriously, I don't have a clue which dip switches do what on the FX-800, I've never seen the beast. You need a manual. Epson's phone number is

☎ 0442 61144, at Campus 100, Maylands Avenue, Hemel Hempstead HP2 7EZ. ***JW***

HITACHI MONITOR



Please could you help me? My friend wants to sell me a Hitachi 19" monitor (type HM-4619-d-aa-zw). It has RGB inputs, filter for use with a Mac, which look like co-axial sockets on a TV, but no D-type connector. Please could you tell me if it would be suitable for my Amiga, where I could get a cable for it, what kind of resolution it has and what price I should pay?

I also wish to purchase either the Impact Vision 24 or Rambrandt 24-bit graphics cards for overlaying graphics onto S-VHS tapes and would like your advice on both their performance, quality and suitability for my needs. Do they both need accelerator boards?

Jason Farmer
Welwyn Garden City
Herts

I called Hitachi, and the helpful people there told me the following:

The HM 4619 you describe is one of two variations which were made around four years ago, and are no longer in production. They were available in either 52KHz or 64KHz horizontal frequencies. The model your friend has is one of the latter. The inputs were separate Red, Green and Blue BNC connectors, and possibly a Sync Pulse connector as well (depends on model). The resolution was 1280 x 1024. And it's absolutely no use to you at all as the frequency is too high for either normal Amiga output (at 15.6KHz) or flicker fixed output at 31.2KHz.

I've not had chance to check out the Rambrandt yet, so I'm in no position to comment on it, though you have no doubt seen the adverts for it in the recent *Amiga World* special issue on video and animation. It certainly seems amazing, but then the adverts would say that, wouldn't they? As for the Impact Vision card – see *Amiga Shopper* issue 12 for my review.

As you don't say what Amiga set-up you have the first thing I have to say is that both GVP's Impact Vision and Progressive Peripherals' Rambrandt cards are designed for Amiga 1500/2000/3000 models only. Obviously, if you already have an Amiga 3000 then you won't need an accelerator card – but if you're thinking of adding the GVP card to a 1500 or 2000 then I would certainly recommend one – 24-bit graphics work becomes incredibly plodding without. Indeed, some top end programs such as *Caligari* and *TVPaint* won't work unless one is present. Looking at the Rambrandt specs, I would think that it would work fine without an accelerator.

On the video side, only the Impact Vision can handle S-VHS directly for overlaying graphics on to video. As the Rambrandt provides only RGB and composite video ins and outs you would need a device to convert the S-VHS signal both to and from either of these formats in order to use the Rambrandt as you plan.

Don't forget (1) that other 24-bit cards, such as the Archos AVideo 24, G2's VD2001 and ACS's Harlequin can output RGB video to suitable genlocks which can be used for overlaying the graphics onto video. Depending on your needs you may find one of these cards as suitable as either the IV24 or the Rambrandt, though in either case a lot of memory (>6Mb) is obligatory and an accelerator (68030 minimum) is recommended.

And don't forget (2) that 24-bit images take up a *lot* of storage space. With sizes typically running at around 1Mb per picture you'll need to think about a big hard disk or tape streamer to collect them on. I'm afraid it may not be just a case of slap in a card and go.

The bottom line comes down to cost and need. And the ultimate judge of this has to be your wallet. Of course, quality is important, but I think you try to see some of these devices in action before you buy. ***GW***

STAR ESCAPES



Do you know where I can get a driver for a Star LC24-200 colour printer? The EpsonQ driver doesn't do it justice.

Also, can you help with the following problem? I am trying to access the shadow and outline styles by using the 'extended command' described on page B-19 of the Amiga manual.

From the Shell, typing 'copy * to prt:', then the [Return] key, then 'ESC[3"ESCq3' then the [Return] key again results in 'q3' being printed in normal type, and any text following that is on normal style as well.

I've tried it with other escape code sequences, using both the generic driver and the EpsonQ one, with the same result.

C Aldred
Farnborough
Hampshire

The best driver I know of for the Star LC24-200 is the EpsonQPlus driver on *Jamdisk 2* (from *JAM* on ☎ 0895 274449).

I've had a go with that 'extended command' stuff myself and can't get much joy out of it either. To be honest I'm not sure if it's something we're both doing wrong, or if it simply doesn't work.

There are one or two PD and shareware utilities that let you send escape codes to the printer to change styles and so on. For instance there's one on Fish Disk 392 called *Pmode*. It was specifically written for the NEC P6 Plus, but should work with lots of other printers, including yours, although it's quite an old program and the source may need changing to include details of your shadow and outline styles. Perhaps you could write a begging letter to the author with a little shareware fee?

The ultimate answer is to buy a word processor like *Protext* that supports these styles or allows you to send printer-specific control codes directly to the printer. ***JW***

COME TO A CLICK STOP



I have recently bought an Amiga 1500 with a GVP 52Mb hard disk. Overall I am very pleased with the machine and the new version 2.04 of Workbench. However, I am dissapointed with the internal disk drives which seem to 'click' continuously whenever the drives are empty (this is made worse by the 1500's casing which seems to amplify the click!).

Is there an anti-click device available that will work on the A1500's Chinnon drives. Power Computing makes one, but I am told that it will not work with my system. Failing that, is it possible to turn the drives off from within the startup-sequence? I can do this from the Boot menu, but this is far from ideal!

Andrew Smith
Slougy
Berkshire

You're in luck! There is actually a PD program called *NoClick* which turns the annoying click off on both the A500 and the A1500. It's available on a two-disk collection of utilities called 'Workbench 2.0 Utils' which is available from George Thompson Services ☎ 0707 664654 for just a couple of quid.

I'm afraid the only way that the Amiga's disk drives can be turned off without resorting to hardware butchery is through the Workbench 2.0·boot menu. Buy the Workbench 2.0 Utils disk though and your problem will be solved! ***JH***

CHIP CHAT



At the moment I own an A500 Plus but I am considering upgrading to the more expandable A1500 Plus which I have seen advertised in several magazines. I would therefore be grateful if you could answer the following questions.

a) Does the new A1500P incorporate the entire Enhanced Chip Set (ie the Super Agnus and Super Denise chips) or just Kickstart 2.

b) Which monitors are available that can display the new Productivity mode that ECS supports? Can I use a standard PC VGA/SuperVGA monitor or do I have to have a multisync?

David Plumb
Poole
Dorset

a) The simple answer to this is yes and no. Although both the A1500 and the B2000 now come with ECS and Workbench 2.04, the Denise chip is not the same as the ECS Denise to be found in the A500 Plus. As a result, the A1500 Plus can only address a maximum of 1Mb of Chip RAM, as opposed to the A500 Plus' 2Mb. Apart from this though, both sets of chips offer the same extra ECS screen modes and resolutions.
b) Commodore markets its own ECS compatible monitor, the A1950, but frankly it's a tad expensive. You can use VGA-style monitors to display ECS screen modes, but they can't be used to display the Amiga's standard modes. Your best bet is to treat yourself to a multisync. Multisyncs can display all Amiga screen modes, including the new ECS screen modes. ***JR***

PC PROG PROBLEMS



I am trying to learn C but find that programs created on a PC cannot be compiled on my Amiga and I get error messages that I don't know how to solve. Is there an ANSI compatible Amiga C compiler around and how nuch will it cost?

M Margaritis
Kingston
Surrey

If you are dealing with simple Shell/CLI type examples that are using C's standard I/O facilities, such as printf() and scanf(), then there should not be much problem in creating the equivalent Amiga program. The compilation errors could however be arising from having PC specific header file specific

material in your source code.

Another possibility is that you are using a Kernighan and Ritchie style Amiga compiler, such as *NorthC*, to try and compile ANSI C code. There is a public domain ANSI C compiler called *PDC* floating around but, if you are thinking of taking up C seriously I really would advise you to go for a commercial compiler such as *Lattice/SAS C*. Once you get into the system-related side of programming the Amiga, then you, like the rest of us, are likely to find things quite difficult enough without the added hassle of poor documentation, missing functions, bugs etc, that you'll find when using most public domain compilers.

The current version of *Lattice C* costs around £175 but it really is worth every penny of the asking price! ***PAO***

YO HO HO

I bought a second-hand copy of *Professional Page 1.31* without a manual and was wondering if there is any way that ordinary Amiga bitmap fonts can be used.

Steven Nolan
Killinarden
Eire

Why would anyone sell their copy of *Professional Page 1.31* without the manual? I'll tell you why: because they have upgraded the software to a later version and need to keep the manual for their own use. They are duty bound to send back or destroy the earlier version, selling it as second-hand is software theft, or 'piracy' to give its glamorous name.

Look, Steven, I'll answer your question because you probably bought it without realising what you were doing, but I don't want any more letters from people without manuals for their software. I'll just throw them in the bin, no matter what the excuse for having no manual. I've heard them all – I lost it, the dog ate it, burglars took it, the house burned down, my baby sister dunked it in her potty and then wiped her bum on it... If you've genuinely lost or destroyed your manual and have registered with the software company concerned, they will certainly sell you another one.

Anyway, enough preaching. Insert your *Professional Page* program disk and click once (not twice) on the program's icon. Select Info from the Workbench menu and in the requester that appears click on the down arrow to the right of the words 'Tool Types' until you get the words 'FONTS=' in the Tool Types field. It probably says 'FONTS=CG', change it to read 'FONTS=AMIGA' and then Save.

The Tool Types must be all in upper case, no spaces either side of the equals sign.

To be able to use Amiga bitmap fonts *Professional Page* requires them to be in the currently assigned FONTS: logical device, and each font you want to use must have an associated '.metric' file, also stored in FONTS:. Without the '.metric' file *Professional Page* cannot use the font.

The program comes with a number of bitmap fonts and their '.metric' files on its fonts disk. You can transfer these to the 'fonts' directory of the disk you boot from, which becomes the default FONTS: device, or you can keep them on another disk if you like, provided you re-assign the FONTS: device to that disk and/or directory.

For example, let's say you kept them all in a directory called 'fonts' on a disk called 'PPageFonts', you would need to execute the command:

```
Assign FONTS: ↵
PPageFonts:fonts
```

before running *Professional Page*. You're running under Workbench 1.3 so the 'PPageFonts' disk will need to be in a drive when this command is executed.

If you want access to both Compugraphic and bitmap fonts, change the Tool Types to 'FONTS=ALL'. ***JW***

JARGON BUSTING • JARGON BUSTING

ANSI C – A standard devised by the American National Standards Institute, which differs in some areas from the definition of C given by Kernighan and Ritchie, the language's creators.

Bitplane/bitmap – A bitplane is an area of memory where every binary bit corresponds to a pixel on the screen. One bitplane represents a monochrome image, several can be overlayed (a bitmap) to represent a colour image.

Hard drive – Like a floppy drive, but much bigger and faster. Also, the disk cannot be removed, so once the hard drive has been filled, it's either time to delete excess files or get another one.

Kickstart – The most basic and central part of the Amiga's operating system. These days it is held in ROM, so that it is immediately present when the machine is switched on. A1000s have Kickstart on a floppy disk meaning that on power up this disk must be inserted before the Workbench disk.

Partition – Part of the drive separated off from the rest. As far as Workbench, AmigaDOS and the rest of the world is concerned, a partition is a disk in its own right.

Serial port – An interface port at the back of the Amiga, used mainly for connecting to a modem for communications purposes.

1.2 TO 2

I am ashamed to admit that I am one of the few remaining Kickstart 1.2 owners! Although at the moment I do have my reasons for having not upgraded – I can't find enough information on how to upgrade my machine to the latest, greatest set of custom hardware. I must have just about the oldest set of chips ever available but I can't find a single list that details which chips I need and how to install them. If possible, I'd like to save myself some money by installing all these chips myself. Can you help? Failing that, where can I send my machine to have to necessary chips installed? You are my last hope...

TS Moore
Newcastle Upon Tyne

Upgrading your machine to the specification of a new A500 Plus is going to require 3 new chips (KickStart 2.0 and the new ECS Agnus and Denise chips) and a jumper on the PCB to be cut so that the machine can access the extra chip RAM.

You could do the job yourself, but I'd strongly recommend you to send your machine to a Commodore approved Service Centre which will be far more able to handle the rather tricky work envolved. ***JH***

SCANNER INTERFACING

What hardware do I need to use the Sharp JX300 scanner? I realise that interfacing it to the Amiga 500 is a no-go.

Mark Senior
Dodworth
S Yorks

The JX300 uses the Hewlett Packard GPIB (General Purpose Interface Board) standard, which was developed to connect scanners and other equipment to PCs long before the SCSI standard took over. Modern Sharp scanners (such as the JX320, the replacementfor the JX300) use the SCSI interface. The only way to link this scanner to the Amiga is with the ASDG GPIB interface board (which will only fit the Amiga 1500/2000/3000 range). This is included as part of the ASDG *ProScanlab* bundle, which also includes the software to control the JX300. ***JR***

VANILLA SPLIT

I have a Vanilla VAN-K 1383D 13" colour monitor, which is supposed to be a multisync analog RGB-type. I have tried to connect it to my Amiga 500 by making up a lead connecting RGB, H-sync and V-sync to the appropriate pins. I get a stable picture – but it is 'wrapped around' the screen – with the picture split at the screen edges and with a brighter portion in the centre of the screen. However, the monitor sets up OK on an RGB generator. I only have access to a very poor copy of the circuit diagrams so I can't read the pin designations very well. Can you help?

DA Butler
Wakefield
W Yorks

Looking at the specification sheet you sent me I see that the horizontal scan frequency for the monitor is given as 31.5Khz. The problem is that the Amiga normally supplies a 15.6Khz RGB output. In order to drive the monitor correctly you would need to provide an output in the region of 31.5KHz by using a device such as ICD's Flicker Free Video board. Otherwise you'll just have to think about buying a monitor which can handle the normal Amiga RGB output. ***GW***

PICTURES POSER

I've enclosed three print-outs, two of which are attempts I've made at getting decent printouts of the *MED 3.11* manual, which include some diagrams within the text.

The first is from the vastly overrated *Wordworth 1.1*, the second is from the cheap and cheerful *PageSetter 1.21* as found in the *Home Office Kit*, the third is a printout of the two diagrams from *Deluxe Paint*.

The *Wordworth* diagrams have come out looking squashed and fat, thus taking up a lot more room than

they should do. They were cut out from *Deluxe Paint* as med-res brushes – black and grey on a white background – and then imported as normal.

The *PageSetter* diagrams come out much smaller than in *Deluxe Paint*, which in itself isn't a problem as I think they look much better. (Although the question remains: why?) On top of this, however, they've gained a whole load of dots in the background, despite them being the same black and grey on white brushes.

My only clue to solving this problem is that the background colour (colour 0) of the original picture from which the brushes were cut was light blue. But if colour 0 was chosen as the background on the *Deluxe Paint* palette when the brushes were 'lifted off' (in which case only the foreground colours are lifted), why has the background colour apparently come out in *PageSetter*?

The *Deluxe Paint* printout, as can be expected, looks pretty much the same as the screen version.

Why does *Wordworth* squash the drawings? Not even *KindWords* would do that! Why does *PageSetter* put dots in the drawings?

Jeff Jeffery
Borehamwood
Herts

It's all to do with the 'aspect ratio'. Many non-art programs that import IFF graphics assume that the aspect ratio of the picture will be that of a 320 by 256 (lo-res) or 640 by 512 (hi-res) screen, which is a width:height ratio of 5:4. If the picture is in med-res (640 by 256, a ratio of 5:2) is will appear on the printed output at the correct width, but only half the height.

It will look OK on the screen if you are working in med-res mode, but if you look at the *Wordworth* vertical ruler while in med-res mode you will see that distances between the inch markings are twice that of those on the horizontal ruler.

To solve the problem you can either stretch the graphic in *Wordworth* to be twice the length it imports as, or a better way is to use *Deluxe Paint* to change the resolution of the graphic from 640 by 256 to 640 by 512, using the 'Picture/Screen Format' menu selection. After hitting the Hi-Res button and OK, when *Deluxe Paint* asks you if you want the image stretched to fit the page, say Yes. Save this picture, or cut out a brush from it, and it will import into *Wordworth* at the correct aspect ratio.

Now to sort out your background dots problem. As you know, *Wordworth* can treat colour 0 of a picture as being transparent, however *PageSetter* cannot. It doesn't matter that you have set colour 0 to be the background colour in *Deluxe Paint* before saving the brush, because it was light blue *PageSetter* has created a monochrome dither pattern to represent that colour.

What you need to do is to use *Deluxe Paint* to change any colours that you don't want printed to be white - so in this case, simply adjust the RGB value of the light blue colour to be 15,15,15. It's important to remember that *PageSetter* sees this as white colour, not transparent, so you won't be able to see through it to anything underneath. ***JW***

SERIAL MURDER

When printing more than once my Amiga crashes, giving a different guru meditation number depending upon which program has been doing the printing.

Also, my serial port has stopped working.

I have used a friend's copy of *Protext 4.2* and it prints OK unless you interrupt it, at which point up pops the guru.

D Shorten
Carterton
Oxon

You have a broken Amiga. It needs fixing. Simple as that.

Lots of people break the serial and parallel ports by plugging things into them while the Amiga is switched on, or by plugging the wrong things into them. I know a number of people who have killed their Amigas by plugging external floppy drives into the parallel port.

Don't listen to anyone who tells you that it all right to do this, that it doesn't really do any harm.

It might be a pain in the neck having to power down because you forgot to connect something before you switched on, and you may get away with it a few times, but eventually you'll wiggle the connector a bit too much while pushing it in and ... bang ... at least one dead port, and there may be further damage. ***JW***

VORTEX OF DOUBT

I currently have a 40Mb Vortex System 2000 hard drive attached to my Amiga 500, which has 2Mb of memory. My problem is expansion of hard drive capabilities. The Vortex has a "personality module" with two 25 pin D connectors, of which only one isused by the hard drive. I would prefer to have a larger capacity hard drive, but am a little unsure as to whether I can expand and yet still use my current hard drive. Is it possible to add "something" else to this personality module, and actually use it, or is the second connector there just for show?

I would also like to add extra memory to my machine but the Vortex doesn't allow for that, so is there any point in keeping this rather slow, unexpandable drive?

David Mullins,
Castleford,
W Yorkshire

The Vortex can support 2 of the 40Mb drive modules attached to the unit, whether these are still available is doubtful. There are big problems with the Vortex running under Kickstart 2.04, so I would suggest you ditch this unfortunate drive as soon as you can afford to. ***JR***

HARD QUESTIONS

Having read your review of hard drives in issue 12 of *Amiga Shopper*, I'm considering buying one for my A500. The GVP Impact Series 2 seems the best choice, but I'd like to ask you the following questions.

a) Firstly, does the GVP drive offer automatic head parking? Is it OK to switch the Amiga off whilst the drive is still running or will I have to park the heads first?

b) Why does it take up 30K or so for each partition?

c) Is it OK to copy between partitions (DH0: to DH1:, for example). I understand that some drives have problems with this sort of thing.

d) Do I need an additional SCSI controller to use the drive or is this included?

e) How well does the GVP drive compare with the RocHard?

I am considering buying the Canon BJ10ex for DTP and mono posterwork. Is it any good?

Is there are package available that will allow me to create structured artwork for importation into *PageStream 2.1*. *DPaint* IFF files are no good because they come out jagged when printed?

Anon

a) Both the 105 and the 52 Mb versions of the GVP Impact Series 2 do offer auto-head parking, although for added security it is still worth getting into the habit of parking the drive's heads before you switch off.

b) All hard drives suffer from this problem, not just the GVP drives. When you connect up either a floppy or a hard drive, AmigaDOS automatically allocates memory to the drive for buffering etc.

c) Early GVP drives did suffer from this problem, but it has since been sorted out.

d) No, the GVP drives includes both the hard drive and its controller in one plug-in and go box.

e) Both drives perform pretty much the same, so it comes down to a matter of personal taste. I personally prefer the GVP drives simply because they seem more professionally put together and are generally easier to use.

If you need proof of just how good the Canon BJ10e really is for DTP work, then check out Jeff Walker's *JAM* fanzine. Jeff prints all his master pages using the Canon on an accelerated Amiga. Printing complex pages using the standard Canon driver takes time, but the results are as good, if not better than those obtainable from cheaper non-Postscript laser printers.

What you need is Gold Disk's *Professional Draw 2*. It costs £129 and is available in this country through Silica Systems ☎ 081 309 1111. ***JH***

TOUCHY SUBJECT

I recently bought a Podscat PT-3030 graphics tablet but unfortunately the shop that I bought it from has shut down. The problem is, I didn't receive a driver program for the tablet, so it's rendered pretty useless at the moment.

I own AMOS and the AMOS Compiler and I was wondering whether it would be possible to write a driver program using this. Unfortunately my knowledge of AMOS isn't exactly great (moving a sprite around the screen is about as far as things go!), so I'd appreciate any help that you could give me.

Steven Hartoom
Middlesex

It is possible to use AMOS to translate the signals from the Podscat, but AMOS is far from ideal. Software drivers for devices like touch tablets need to run at the fastest possible speed and multitask at the same time. AMOS is pretty quick, but you really do need the raw speed of a language like C or assembler to get a super-smooth reading from the tablet. If you feel up to the task, then give it a go but otherwise your only other option is to

contact HB Marketing (☎ 0753 686000), the official UK Distributor of Podscat tablets. It sells the driver program for £50. ***JH***

WHICH AGNUS

Would you please tell me whether my Agnus chip is capable of supporting 1Mb of Chip memory (SysInfo shows 8371/8367 Agnus).

R Gilham,
Ramsgate
Kent

No, you will need to upgrade to the 8372A Agnus to get 1Mb of Chip RAM onyour Amiga 500. ***JR***

KEYBOARD QUANDARIES

Before I start I'd just like to help Paul Madden from issue 13 out who wants a garden design program – there's a suitable PD program on the 17-Bit Software *Update 23 Landscape* disk magazine.

Now, can *you* help *me*? Do you know of a MIDI keyboard without a synth? I want to connect a keyboard with just the keys to my Amiga with MIDI, running *Startrekker*, so that I don't have to enter the notes with the computer keys. I still want the sound to come from the Amiga when played back.

Paul Harthen
Dunkinfield
Cheshire

There are plenty of MIDI keyboards around which don't have in-built synthesizer circuitry. They are usually called 'mother keyboards' or 'master keyboards' but the only trouble is that, because they are aimed at the professional/serious user, they are often more expensive than a complete budget synth. There is a company called Cheetah which does make a number of reasonably priced models and you may be able to pick up one of their its models second-hand. Have a look at the adverts and 'for sale' sections in magazines like *Sound on Sound* and *Music & Equipment Mart*. ***PAO***

IMAGINARY COLOURS

I am using *Imagine 1.1* and I have been trying to render an animation in ANIM format for use in *Deluxe Paint*. But in the resulting ANIM file the colours are different in each frame, even though *Imagine* asks if you want to lock the palette before starting the render. But this doesn't seem to make any difference, regardless of answering yes or no. The manual is no help in explaining this function.

I've also tried remapping in *Deluxe Paint*, but this does not work. Is there a way round this problem? Rendering in *Imagine*'s own animation format is OK, but it isn't as flexible as IFF ANIM format.

Les Johnstone
Glasgow

I'm afraid this seems like a bug, and it hasn't been fixed in version 2.0 either, which is most infuriating. Neither is there any reference to this feature/problem in the new manual.

I've experienced this problem myself, and so have others I know. I called someone at Impulse Technical Support in the US (☎ 0101 612 425 0557) which said that we should do the following when setting up the rendering sub-menu:

Select RGBN format (he wasn't specific as to 12 or 8 variation) for the rendering format. Select ANIM (for the animation format). After selecting Make from the Project menu (to make the animation) reply YES when the Lock Palette requester appears.

Impulse says this is the correct way to make an ANIM5 file and that it works every time for it. This is certainly true if you use an anim player such as Sparta's *ShowAnim*, but it definitely doesn't work if you use *Deluxe Paint*. I tried several times to make this method work, called Impulse back, checked I was doing it correctly (and I was), told the guy that it didn't work but he still insisted he was right. I thought this a little narrow-minded, to say the least.

However, there is a way to solve this problem with *Deluxe Paint* – if you're desperate. Beware though – it's dreadfully tedious and could require large amounts of memory. There may be a better way, but this is all I've found so far. It goes like this:

Use ILBM-12 format for rendering the Imagine images and ensure that when you start the ANIM generation from *Imagine* you don't allow the images be deleted after use. Load the resulting (weird coloured) animation into *DPaint* (remember that only *DPaintIV* can handle HAM) and go to the first frame. Flip to the spare screen and load in the first individual picture. Flip back to the main screen. The palette will most likely have changed to something even stranger. Now select Remap from the Picture/Change Color menu in *DPaint 3*, or Color/Remap if you are using *DPaint 4*. The colours will be changed to match the spare screen's palette.

You would expect all the frames of the animation to now be correctly remapped. Well, of course this isn't true, as the palette used in the generation of each frame was different (because it wasn't locked) and when the ANIM was made these differences were simply absorbed into the file. As you well know from experience.

So we have to do some more remapping to correct this. In fact, we have to remap the *entire* animation, picture by picture! All you have to do is move to the next frame, flip the screens, load the next image in the sequence, flip back, remap.... and so on. A right pain, but it works. I just hope I never have to fix a 30 minute animation like this!

Until this shortcoming is fixed maybe there's someone out there who could write a program to do the remaps automatically? Anyone fancy a challenge? ***GW***

BURNT OUT CASE

I bought a MIDIMaster from Datel Electronics. I wired up all the MIDI leads, checked they were correct and ensured everything was turned off. I plugged the interface into the serial port and switched it all on. After loading *Sequencer One* and setting all the channels correctly, I couldn't get any of the Amiga, keyboard or drum machine to communicate. I then noticed a burning smell coming from the top of my Amiga. I immediately switched everything off, and as my Amiga has an expired warranty opened it to investigate. I discovered with much dismay that one of the resistors (E502) had burned out.

The thing which really worried me, though, was a yellow sticker on top of the serial port with the words "Burn In" on it. Please could you tell me:

a) What does this yellow sticker mean?

b) Is the interface likely to be at fault, or the serial port on the Amiga?

c) The name of a good, reasonably priced repair centre

d) Should I make an official complaint to Commodore regarding this malfunction as this serial port has never been used before.

Austin Ralphson
Warrington
Cheshire

I strongly suspect the Datel MIDI cartridge is at fault here. What seems to have happened is that a high voltage has been sent down one of the serial signal lines. This is unlikely to be a problem with the Amiga, or it would have burned out much earlier. I suggest you contact Datel regarding both a replacement MIDI interface and the cost of repairing your Amiga.

The "Burn in" sticker means the machine was tested in the factory, another indication that it is unlikely the Amiga itself was at fault. ***JR***

OH BROTHER!

I have an Amiga 500 Plus with an external Roctec floppy drive and a Brother M1818 printer. When printing through any word processor, even *Protext 5.5*, text justification doesn't seem to work. It works fine with DTP packages such as *PageSetter* and *PageStream*.

Help!

Are there any utilities that will allow me to display on the Amiga '.GIF' images transferred from a Sun SPARC workstation?

By the way, my Roctec external floppy drive works fine, except that most times I try to save something I get write errors near block 880. Is

JARGON BUSTING • JARGON BUSTING

ANIM – A method of storing animation frames developed by Spartafilm, whereby only the changes between successive frames are stored, thus saving significant amounts of space.

Genlock – A way of slaving one video source (eg Amiga) to another (eg video tape) in order to synchronise their signals to allow stable wipes, mixes and other effects including overlay between the two sources.

GIF – Graphics Interface Format is a file format used for storing pictures so that they can be transferred between different computers and, particularly, so that they can be transmitted across computer networks.

IFF – Interchange File Format is a means by which data from different graphics or sound sampling programs are saved in a compatible way. It allows data to be exchanged between programs very easily and avoids the situation on, say, the PC where dozens of different graphics packages each save data in incompatible formats.

Mother keyboard – A musical keyboard following the layout of a piano keyboard. It has no synthesiser components, but merely converts the player's key presses into MIDI information for transmission to a synthesiser or sequencer.

the drive faulty, or is it incompatible with the 500 Plus?

Professor Guf
Nottingham

Sigh. Where *do* you people get these printers from? Why don't you check that there is an Amiga printer driver for them *before* buying them? (Yes, I know, because they were going cheap.)

The example printout you sent me shows that this text justification problem of every other line being slightly more indented than normal happens even with the printer's self-test, which means it isn't *Protext* or the printer driver causing it. You should speak to Brother (☎ 061-330 6531); it could be that the printer is faulty. The printouts are OK with *PageSetter* and *PageStream* because these are printing in graphics mode, whereas the self-test and *Protext* are printing in text mode.

There is a program on Fish Disk 458 called *GIFMachine* that converts GIF images into SHAM (Sliced HAM) or 24-bit IFF ILBM format. SHAM pictures can be displayed with a picture viewer such as *Mostra* (Fish Disk 476), to display 24-bit graphics you'll need special (and expensive) hardware.

On the commercial side of things, *Art Department Professional* can convert GIF images to any IFF ILBM format.

Your Roctec disk drive sounds as if it is faulty. When they begin to go wrong, external drives that take their power from the Amiga sometimes cause frequent read/write errors and strange requests to 'replace volume xxxx' when it is not needed and already in the drive anyway. Commodore will tell you that the only external floppy drive that adheres to the correct Amiga standard is the official Commodore one, and the company wouldn't be telling you a lie. ***JW***

HOW DO THEY DO IT?



Please give me some programming advice. How can I make those 'rubber band' lines, boxes etc that can be pulled and dragged in and out across screen graphics without interfering with the display? I can achieve a similar result with AMOS using a dual playfield, but then I'm restricted to just 8 colours. How can I achieve a similar effect with 16 or 32 colours?

David Smith
Kings Lynn
Norfolk

Rubber banding is actually a very simple effect to achieve. All you do is to switch the draw mode to INVERSEVID (use the AMOS command GR WRITING to do this) and then draw the box on the screen over the image. Instead of drawing a solid box, the Amiga will simply invert the pixels that are already shown – if you had a black and white screen, black pixels would be reversed to white and vice versa. Immediately after drawing this box, you should then draw a second box of the same size in the same mode in exactly the same position. This will then reverse the pixels back to their original state, therefore restoring the display. Clever eh! ***JH***

PIPES BARRED



I have an Amiga 1500+ with 52Mb HD and a GVP impact II controller with 8Mb of Fast RAM. There is also a GVP Combo 33 board fitted with 4Mb of 32-bit Dram.

I am running *Bars & Pipes Professional 1.0c* and when using certain functions a low memory warning occurs followed by a recoverable Guru 0100000C. If I try to open a Shell window I get full Guru 8100000C. I have also occasionally had the latter Guru when I haven't been using *Bars & Pipes*.

Kevin Breidenbach
Herne Bay
Kent

I can't imagine, no matter what you are doing, that you are really running out of memory but there is obviously some sort of 'gremlin' loose in your system. I ought to mention that you provided a lot of other system info (which unfortunately we didn't have the space to print) and details of the checks you have already made.

I think the fact that you've had Guru problems with other programs tends to suggest that *Bars & Pipes* is not to blame and I personally think that at the end of the day you'll find a hardware-related error causing the problem. Zone Distribution ☎ 071-738-5444 has, however, said that if you contact the company directly with the complete technical details it'll discuss your problem with the *Bars & Pipes* programmers themselves to see if they can throw any more light on it. Since *Bars & Pipes* is used a lot in the States on accelerated large-memory Amiga systems they are likely to have a lot of experience in this area. That being so, Zone's offer seems a reasonable next step for you to take. ***PAO***

KEYBOARD CHAOS



My caps lock light starts flashing, two short flashes in succession. The keyboard locks up, although all mouse and joystick operations continue. The computer continues to work OK except the keyboard won't work. Reset keys still work. This seems to be a common fault. Is it something I can fix myself? Sometimes moving the RAM expansion in the trap door cures it for a while.

Kevin Howell
Brislington
Bristol

This is a common fault. There are in fact two separate computers in the Amiga case. As well as the 68000-based Amiga, the keyboard has its own 6570 processor (a derivative of the 6502 found in the BBC and Commodore 64) which has the sole task of reading the keyboard and communicating the state of the keyboard to the computer. The flashing LED means that this computer has crashed! Because it is separate from the rest of the Amiga, it does not cause the Amiga to crash.

The crashes are usually caused by the 6570 chip being loose, some keyboards have been made with components shoved into the 6570 socket, these can sometimes short over to other pins. I used to have this problem on my original old A500 (before it got cannibalised for spares), I cured it by banging the Amiga case above the keyboard circuitry (to the left of the power and drive LED's). I don't often reccomend people hit their Amigas, but when I had the problem it worked almost every time. ***JR***

GENLOCK V PRINTER



Ten months ago I bought an Amiga package which included a Rendale 8802 genlock. I decided to put the genlock aside until I had found my way around the Amiga before attempting the more complicated aspects of desktop video. Now I have a problem.

I can install the genlock direct to the Amiga's RGB port and feed my monitor from the 23 pin connector at the back of the genlock. But this precludes the use of the software provided with the genlock, which requires special connections to be made up. When I made up the cable as described in the handbook I found that it caused the following limitations.

a) I have to remove the genlock control cable from the parallel port so that I can use my printer.

b) The control cable is connected to the 23 pin socket on the rear of the 8802, forcing me to use the video output to a normal TV so that I can design titles etc.

I would therefore like to know if it's possible to feed the parallel port output to a switching box, with one output going to the printer and the other to a custom-wired cable which connects both the required control pins from the parallel port to the genlock and the genlock to my RGB monitor?

This may all seem very simple to you, but I am a learner who has had no end of enjoyment from my machine in the last ten months and now wants to go a little further.

MJ Davis
BEM
BFPO 39

You're absolutely correct in thinking that you can use a parallel port sharer to switch between your genlock and printer. And you're equally right when you suggest building your own cable.

Just to make sure, I checked with Marcam (the supplier of Rendale genlocks) and was told that your proposed setup would work fine.

I should point out, however, that by the time you read this Marcam will be offering an upgrade service which will add switching and fading capabilities to the 8802, allowing full control from a panel, rather than by software. This will have 5 switches, allowing the output signal to be selected from normal overlay (ie genlock), Amiga signal, external video, Background 1 and Background 2 and a fader to dissolve between the selected output and pure external video.

If you are interested in this upgrade (which will remove the need for extra wiring to the genlock's 23-pin port) the price will be around £45 (including return postage) and it will be available from: Marcam ☎ 0604 790466.

But either way, you are on the right track. ***GW***

BROKEN SWIFT?



I have a problem with my Citizen Swift 9 printer. It prints text with no worries, but when it comes to print graphics, with or without the Citizen colour kit fitted, it misses lines of print, and where overlaps of print are required it moves on and prints the overlap further down.

I use the EpsonX[CBM_MPS-1250] driver and all the dip switches on the printer are off, except when using the colour kit when SW2 number 8 is on. I have

A1000 QUERIES



I have a couple of queries concerning hardware upgrades for the A1000.

a) Can I use the GVP Impact II hard drive with my machine? Having read several reviews, it seems to be the best drive available. If it doesn't work, which drive would you recommend?

b) What accelerator cards can be fitted to the A1000?

Paul Bennet
Reading
Berks.

a) I see no reason why the GVP drive shouldn't work on the A1000. Apart from the lack of a timing signal on the A1000, both have identical bus connectors. Obviously the placement of the mouse ports is a problem when using A500 drives with the A1000, but this can be solved simply by purchasing an extension cable for the bus connector. I'm sure if you have a chat with Trilogic on 0274 678062, they'll be able to make you up a suitable cable.

b) Having never tried to fit an A500 processor card inside an A1000, I can only base my answer on theory. Technically, any processor card that fits to the A500 via the 68000 slot (AdSpeed, for example) should work inside the A1000 providing the card fits inside the A1000's case. Although the A1000 has a larger case, the position of the 68000 inside the A1000 might cause problems with larger cards. If in doubt, always ask before you buy! In my opinion, the best people to talk to about such matters are Solid State Leisure which can be contacted on ☎ 0933 650677. ***JH***

tried changing the printer prefs – you name it, I've changed it, but nothing ever works.

The software which refuses to print out correctly is *Deluxe Paint II*, *Photon Paint 2*, *Digi-Paint* and *PageSetter II*. I have the same set-up as a friend and his Citizen Swift 9 (with colour kit fitted) prints out beautifully, both graphics and DTP.

Could there be a fault somewhere?

Adam McLocklan
Birkenshaw
Bradford

Well, if your friend has *exactly* the same set-up (printer driver, dip switch settings, preferences settings) and his graphics printouts are good while yours are bad, then we can only surmise that your printer is broken.

Have you tried the printer's self test? Does this produce the expected output?

You could try using the Star9Plus driver on *Jamdisk 5* (from *JAM* on ☎ 0895 274449), which should give better results than the the MPS-1250 one on Extras. ***JW***

NOT-SO-DELUXE PRINT



I am having a little problem using *Deluxe Print 2* with my standard Amiga 500 (upgraded to 1Mb Chip RAM) and a new Citizen 24E colour printer.

I use a printer driver called the *Citizen Print Manager*, which has specific settings for the 24E. I have had no problems getting printouts from *Deluxe Paint 3*, *PageSetter II*, *Deluxe Print I* and *TextCraft*.

When I have designed my sign or calendar on *Deluxe Print 2* I select the Print option and get a requester asking for the dimensions required for the printout. Whether I click on the Max Width button – which gives me a width of 8in when I use A4 – or manually put in a width of 8in, when I come to print my sign I get a message saying that it cannot print out at those dimensions.

The program will not let me print any design until I have the width set to about 2in or less; the length setting makes no difference.

I use the default settings on the printer driver, which works perfectly for all the other programs mentioned above. Any thoughts?

Darrell P Ede
Branksome Park
Dorset

Well, it's obviously a bug in *Deluxe Print 2* or an incompatibility between that program and the *Citizen Print Manager*. Your best bet is to speak to Electronic Arts (☎ 0753 549442) about *Deluxe Print* and Citizen (☎ 0895 272621) about its *Print Manager*. ***JW***

BUGS NOT INCLUDED



Having received the include headers from Commodore I attempted to compile programs I had written using *NorthC 1.3* but I keep getting these error messages:

```
Graphics/text.h line 68: ↵
Error Expect }
"                " line 75: ↵
Error Expect }
Intuition/preferences.h ↵
line 80: Error Expect }
```

The includes I received were for the 2.0 based machine although I cannot see what difference this should make on these points.

M Scully
Radcliffe
Manchester

Unless someone has physically altered your headers (and you could check the graphics/text.h TextAttr and TTextAttr structures which occur near the first reported errors just to make sure that the structure definitions are correct) I'd say that it is your program, not the use of the 2.0 header files, that is causing *NorthC* to report errors.

One outside possibility however is that instead of setting the INCLUDE environment variable to the complete header set you've specified a filepath in the #include statement. While this would include in the specified main header it might, depending on the way you've organised your files, have failed to read conditionally included support headers. You should have seen 'file not found' errors but these may have scrolled off the screen and left you with the error messages that you've mentioned. OK I know it's a long shot but without seeing the code and your headers it is difficult to know what else to suggest.

It is very easy for *NorthC* to be led astray and *NorthC* error messages do often sometimes need to be taken with a pinch of salt. Having said that I've not found that *NorthC* reports errors unless it has good cause – even if the messages themselves leave something to be desired. The bottom line is this – start by looking very carefully at your program code. ***PAO***

MORE OR LESS...



I recently bought a Supra 52Mb hard drive for my A500 complete with 2Mb RAM. I have updated the startup-sequence using ED and as a result the software only recognises 2Mb. Is there anything I can do to get it to recognise all the RAM and not just the 2Mb Fast? I have installed *Wordworth 1* on the hard disk and updated the startup-sequence accordingly. Although everything else works on *Wordworth* it only recognises 1Mb RAM.

N Zaidi
Watford

Reading your support request coupon, I note your machine is recognising the complete 3Mb fitted to your machine – so there is nothing at fault with the hardware. *Wordworth 1.0* is notorious for its lousy memory management and this has been corrected in V1.1. Therefore, you should return your registration documents and contact Digita for details of how to obtain the upgrade. It is just possible (but extremely unlikely) you have caught a virus which is eating chunks of memory – but I doubt that. Try *Wordworth 1.1* and if that doesn't help write to me again. ***MS***

IT'S THAT #?!&* P AGAIN!



When using *PageSetter 1.2* from the May cover disk of *Amiga Format*, with my Akhterite 1000 printer and the CBM_MPS1000 printer driver, everything works perfectly. Page layout, fine. Text and graphics editor, fine.

But it is all spoilt by a letter 'P' appearing in the left margin each time the printer starts to print. This does not happen with this printer and driver combination when used with other programs.

FR Huggins
South Woodham Ferrers
Essex

The very first thing the CBM_MPS1000 printer driver does is send a bunch of standard Epson control codes that set up the printer ready for printing. This string of control codes appears to be hard coded into the printer driver because it makes no difference which printer preferences you select or which program is doing the printing, it is always the same.

The control string does five things, in this order: it sets the pitch to pica; cancels compressed printing; turns expanded printing off; sets the left margin to 1 and the right margin to 80; and lastly it turns uni-directional printing on.

When you are doing a graphics dump, as you are with *PageSetter 1.2*, the very next escape code that gets sent sets the graphics mode, and this changes depending on what density you have selected in preferences.

So the first of the five escape codes it sends is 'ESC P', which to a totally Epson compatible 9-pin printer means 'set the text pitch to pica'. Now, if the printer doesn't understand a particular character that follows an 'ESC' – in other words if the 'ESC' and the character together do not constitute a command the printer recognises – it will treat that character as something that should be printed rather than interpreted as a command.

So that could be one reason why you get a P at the beginning of every printout – because the Akhterite

1000 doesn't recognise the Epson 'ESC P' command.

So far I've been working with facts, now I have to start to guess a little because I can't find out anything about the Akhterite 1000. I'm going to guess that it has an IBM mode as well as an Epson mode. If I'm right, then the IBM emulation will recognise the 'ESC P' sequence to mean 'proportional printing' and expect a 0 or 1 to follow it in order to switch proportional printing on or off – but it's not getting a 0 or 1, it's getting another escape command, so it ignores this and the first 'ESC' and prints the P.

On the other hand it could be that the Akherite 1000 is so old that it doesn't support proportional printing, and so doesn't understand 'ESC P' at all, and consequently 'forgets' the 'ESC' and prints the P.

The solution is to flip the dip switch that puts the printer into Epson mode. Your manual will tell you which dip switch to flip. If you haven't got a manual you'll have to try to get one from the manufacturer or borrow one from someone else who has an Akhterite 1000. ***JW***

HONG KONG GARDEN



I'm about to be posted to Hong Kong for 2 years and wondered if I would experience any electronic, voltage or humidity problems with my U.K machine.

Secondly, what leads do I need for my RocGen Plus to go with my ageing Hitachi VCR with SCART connector, a JVC TV with 2 SCART inputs, a Sony TV with SCART input and a Hitachi video camera with non-standard everything (though it can be wired up to single audio and video phono outputs).

Cameron Goodall
Band Of The Black Watch
Shropshire

On the first point, having spent several years in that region myself, I imagine that the only problems you'll have will be during the monsoon season. My advice would be to ensure that your computer is kept indoors when it rains. Otherwise you'll find that the power supply is equivalent to the UK one, and the TV system is PAL. Even the plugs are the same!

On the second point, all you should require is a selection of video to SCART leads, ie leads with a SCART connector at one end and separate video (and audio) outputs at the other – preferably the correct ones for your equipment (which probably means phonos). If you don't already have an RGB to SCART for your Amiga you'll also need one of these to connect the RocGen to your Amiga monitor so you can see what you're doing. ***GW***

JARGON BUSTING • JARGON BUSTING

BBS – Bulletin Board System. The name comes from the American College bulletin board (the cork and drawing pins type) which is a traditional meeting and trading place.

Factorial – The factorial of a number is the result of multiplying together all of the numbers between one and the number in question. So the factorial of 3, written 3!, is 1*2*3 = 6.

Include files – Supplied by Commodore, provide all the offsets needed to access system library routines, and the formats for all system structures.

Recursion – Something that is recursive makes reference to itself in its description. For example – "This sentence is false" – is a recursive sentence. A recursive function, as part of the computation it performs, calls itself as a function.

Stack – A method of grouping data together. Each item of data is placed on top of the previous one entered in the stack. Data can only be removed from the top. It's rather like stacking a pile of dinner plates. Stacks are used extensively by the Amiga's operating system, and are also used to store the current state of a program before a subroutine is called.

BETTER XEROX



May I ask you if you have a driver for the Xerox 4020 colour inkjet printer? I have tried the driver supplied on the Extras disk but this does not allow the full range of the printer's capabilities to be used. I have tried fiddling with the preferences settings to no avail.

I have also tried PD suppliers, ordering a disk which the advert stated had Xerox drivers on it, only to find that there were no Xerox drivers at all.

Gordon McLeod
Law
Lanarkshire

Yes, there is definitely a better Xerox 4020 driver doing the rounds that gives excellent results. (I've seen the results, but not the driver.) Try George Thompson Services on 0707 664654, the oldest and probably the most knowledgeable Amiga PD library this side of the big pond. Or ICPUG ☎ 081 651 5436 – the Independent Commodore Products User Group – might be able to help. ***JW***

RECURSIVE CURSE



If I run a wee program such as:

```
P[0,2]
PROCEDURE P [X,Y]
PLOT X,Y
P [X+8,Y]
END PROC
```

up comes 'out of stack space' at line 4. Can you explain the significance of this? Recursion always seems to end in this way.

HF Guy
Stirling, Scotland

When a procedure call is made the parameters (and a return address) are placed on the 68000 microprocessor stack. The trouble with the above recursive routine is that it has no means of stopping itself, so it continues to call itself indefinitely. As this occurs the amount of data held on the 68000's stack, and hence the stack's size, is growing. Without anything to halt the continued recursion the stack would grow in size, exceed the area that had been assigned for it, and then crash the system. Luckily, most high-level languages perform stack checking and, on recognizing an impending stack overflow disaster, the compiler/interpreter will stop the program before any damage is done.

Recursion doesn't always have to end in this way but you must make sure the routine has a suitable exit condition to stop it being called forever. A linearly recursive routine, namely one which makes only one recursive call inside the body of the procedure or function, will often adopt the framework given by this piece of pseudo-code:

```
PROCEDURE LinearRecursion ↵
(... )
IF 'termination condition' ↵
THEN return some value
   ELSE
   begin
1: possibly do some ↵
preliminary calculation
2: make a recursive call ↵
to LinearRecursion()
   end
END PROC
```

Here's a factorial calculation example. It is actually written in Pascal, but it shouldn't be too hard to translate into AMOS, C, or any other language which supports the use of recursion:

```
PROGRAM ComputeFactorial;
VAR n : integer;
FUNCTION Factorial( n : ↵
integer ) : integer;
BEGIN
   IF n=1
   THEN
   Factorial:=1
   ELSE
Factorial:=n*Factorial(n-1);
END;

BEGIN
Writeln('Please enter an ↵
integer...');
Readln(n);
Writeln( 'Factorial of ↵
',n,' is ', Factorial(n) )
END.
```

PAO

COLOURJET DRIVER



I have an Integrex Colourjet 132 printer. Could you please tell me where can I get a driver for it?

Paul Cherry
Hollywood
Birmingham

The only Amiga printer driver for the Colourjet 132 costs £54.05 (inc) and is supplied by Integrex itself. Call the company on ☎ 0283 551551 or write to Integrex Ltd, Church Gresley, Swadlincote, Derbyshire DE11 9PT. ***JW***

COMMS BREAKDOWN



I bought a Supra Modem 2400 Plus (supplied with Amiga to Modem cable). Upon hooking up everything I loaded On-Line! Platinum edition and tried to call some BBSs. No such luck! All I got was garbage ASCII characters. After lots of retries, I managed (don't know how) to call "01 For Amiga" to whom I sincerely apologise for any inconvenience, because most of the time I could neither read the messages nor type anything understandable. After that I never could call anything.

I believe it may be the cable, but it is wired up exactly how the manual says it should be:

DTE	*PIN*	*PIN*	*DCE*
GND	1	1	GND
TXD	2	2	TXD
RXD	3	3	RXD
RTS	4	4	RTS
CTS	5	5	CTS
DSR	6	6	DSR
GND	7	7	GND
DCD	8	8	DCD
DTR	20	20	DTR

Is it the modem, the Amiga or the cable? I can't even get correct answers for my AT commands!

Manuel Joaquim
Pereira, Portugal

It certainly seems like a cable problem. The best course of action would be to take the cable back and get a correct one, probably from somewhere else.

Alternatively you could rewire it yourself. There are several changes you need to make, firstly the RXD and TXD line must cross so RXD on one side goes to TXD on the other. The RTS and CTS lines should do the same.If this doesn't work then the next thing to suspect would be the modem, if possible try a different one (of the same type) or try the modem on another Amiga. ***PH***

NO GQ

I can't find a driver for the Epson EPL-4100 laser printer that I have just bought at great cost to my credit card and my relationship.

It works fine emulating Epson LQ and LaserJet II, but I long for a chance to run in generic GQ mode. The main problem I've found with HP emulation is print positioning, being off centre without any good reason.

Can you tell me if such a driver is readily available as the only reference to such a thing was in your article a few issues ago about the Preferences program.

Neil G Jarman
Sheffield

The only Epson GQ drivers I know of come with the *TurboPrint Professional* package, and these are for the ancient GQ-3500. And I've not yet found a decent LaserJet II driver either. Pathetic, isn't it? No wonder PC owners laugh at us. ***JW***

ADVANTAGE, MR GURU

I have been having problems closing *Advantage* spreadsheets of 30K or more created using *The Advantage.* Whichever way I use to close the files causes a Guru 8100 0009.

This does not happen with smaller files or if I have more than one file open at a time.

RW Nash
Bedwas
Gwent

Admission time here – that's the first I have heard of such a bug in *Advantage* – but that's what it is.

The guru you are seeing is Double Call from Free. (In plain English, that means *Advantage* is attempting to give back memory it does not "own". This is caused by a bug in its memory allocation/deallocation routines and probably only happens when you have one large sheet open because the sheet will be stored in more than one area of memory. It's a little tricky to explain the mechanism, but I advise you contact Gold Disk on 010 1 416 6024000 and obtain the latest version of the program – the last I saw was V1.1 – but there may have been others. ***MS***

IFF(Y)

I have recently purchased a Syntronix *Editman* to enable my 1Mb Amiga 500 to control 2 VCR's for the assembly of videos.

Titles and graphics produced by the Amiga may also be introduced and controlled by the *Editman* if they are in IFF format.

I have found that *DVideoIII* examples of pictures copied to a data disk are readily accepted by *Editman*, but the titles etc that I have made and copied to the same disk are not.

Could you please tell me what I have to do when making or saving my own titles to ensure that they are in IFF picture file form.

Geoff Welch
Appleton
Warrington

Could there possibly be some confusion here over what an IFF picture is and what a *DVideoIII* title is? I think so...

IFF picture format is a standard used by almost all Amiga paint and image software. For instance, if you were to save a picture drawn with *Deluxe Paint* it would be saved as an IFF format file, which can in turn be loaded by any program which supports IFF format (and the screen size and colours your image was drawn in).

Try drawing some pictures for yourself with a paint program and then using *Editman* to control their playback.

From your letter I guess what you may be trying to do is run a *DVideo* title sequence which you have made using text and wipes etc but no pictures. But what you probably don't realise is that the resulting file isn't an IFF picture file – it's more like an actual program which plays back data – including pictures, text and sounds.

On the other hand, when you play back a *DVideo* example file it plays back pictures which are already on the disk, calling them as required. But if there are no pictures for your own title sequence to play back then this is perhaps why your efforts are failing. Try making a new title sequence up, and use some of the images already on the disk. If this doesn't work then I suggest you call Syntronix on 0332 298422 for clarification. ***GW***

PROTEXT GO SLOW

I recently bought an Amiga 500 Plus after using a 1.3 machine for many years. My problem is when using *Protext* V4.22 and a Star LC24-10 printer. The output is very slow compared to when I was using my 1.3 machine with the same software. It prints one line, then waits, prints another, then waits, and so on.

Can you help?

Stephen Clogg
Addlestone
Surrey

That version of *Protext* is so old that I'm surprised it actually works under Workbench 2. (It didn't work that well under 1.3.) I suggest most strongly that you consider upgrading to the very much more faster V5.53 of Protext. Phone Arnor ☎ 0733 68909 and ask about upgrade prices. ***JW***

WEDDING BELLS

I would like to produce wedding videos in a professional manner. What do I need to compete with local video companies? My budget would be around £2000. I already have an Amiga 1500. I have no knowledge of video production other than from reading your magazine.

Is the genlock in the CDTV any use to me as I would like to use the CDTV for other applications.

Ian Shearin
Lincoln

I'm afraid that owning an Amiga is only the icing on the cake as far as wedding videos go.

To be honest with you, I would have to say that £2000 is actually very little if you want to compete with the professionals. You can quickly spend most of that on a well specified camcorder, such as a semi-pro S-VHS model, which is around the minimum level you'd need to compete nowadays. Then you have to think about the editing side of things. Do you buy, or do you hire? I'd say hire, at least until you can afford the luxury of your own equipment. But quality equipment can never compensate for poor craftsmanship. With your self-professed lack of video skills you're heading for deep water and stormy weather very quickly! And there are a lot of hungry sharks out there just waiting for you to sink!

Stop and think. You need to acquire some skills – in business as well as video, because if you can't keep the cash flow on the right side of the red you won't last long – and you certainly won't be a professional. You will also need to survey the market, see how many other companies you will be in competition with, find out if you can make a profit from what you plan to do, and decide how long you can support your company before your name gets around. Success can be hard to find in these troubled times.

Why not think about joining a local amateur video group (which will probably have at least one wedding videographer among its members), or see if there's an Arts Centre near you with some video equipment you could borrow, or which runs training courses for beginners. Or pester a local video company into letting you help out. Then you could at least get some hands-on experience for little initial outlay, and find out if you are suited to doing wedding videos. It really isn't as easy as you might think – and it's definitely not *my* idea of fun. There's a lot to learn, and it can be very hard graft.

But, like all things, if you are prepared to work hard, take some knocks, and persevere, you'll probably get there in the end. I wish you luck, because you're definitely going to need it.

There is no genlock in CDTV. It is possible to connect one to it; but the results would be no different from

JARGON BUSTING • JARGON BUSTING

CD-ROM – Compact Disc Read Only Memory is the latest technology in storage devices. A CD can hold over 550Mb of data, compared to around 100Mb for a hard disk and 880K for a floppy disk. The big disadvantage is that users cannot store information on a CD, only retrieve it, but this doesn't stop CD from being a potentially revolutionary medium.

Emulator – A device, either hardware or software, that enables programs written for another machine to be used on the Amiga. The emulator makes the Amiga take on all (or most) of the characteristics of the foreign machine, and is transparent to the programs running under it.

Fatter Agnus – A newer, although now superseded, version of the Amiga's custom chip dealing with graphics. The difference this chip has over its predecessor is the ability to access 1Mb of Chip RAM instead of 512K.

ROM – Read Only Memory is used to store essential programs, such as Kickstart and many library routines.Nothing in ROM can be changed.

connecting a genlock to an Amiga. If it is important to use CDTV rather than an Amiga, then fine - but it would be advisable to wait until some decent video software became available for CDTV. ***GW***

QUANTUM LEAP

Would it be possible to replace the 20Mb drive in my A590 with a 52Mb Quantum. If it is, what sort of speed would it acheive with the A590 controller.

If I were to buy an accelerator (Microbotics 030) would it interfere with my hard drive or ROM sharer. Would everything fit in my CDL 1500 comfortably?

Paul Caselton
Newton
Swansea

A Quantum SCSI drive will directly replace the 20Mb A590 drive, but make sure you get a SCSI cable with the drive, some suppliers do not include SCSI cables.

The Microbotics 030 board shouldn't interfere with the ROM sharer or the hard drive in a normal Amiga, but whether they will interfere inside the Checkmate case is another matter. ***JR***

CD-ROM REQUEST

With the arival of the A570 CD-ROM drive I would very much like to be able to use this new software format, but having an A1500 I might find this a little difficult with no edge connector. I read in your magazine that the A570 conforms to the ISO 9660 file format which is also used by PCs, so I was wondering if it is possible to use the internally mounting drive sold for PC', these are normally sold with a driver card for a PC, but would it be possible for me to use my GVP II SCSI card for an interface?

Stephen Hall
Skewe
Aberdeenshire

Standard SCSI CD-ROM drives will work with the Amiga after a little persuasion. There are three problems:
a) Interface – Only interfaces that support the Commodore SCSI direct standard (which include the GVP Series II, ICD, Commodore A2091 and the Microbotics Hardframe) will be able to talk correctly to CD-ROM's
b) Drivers – The Amiga will not understand the ISO9660 disc format without a software CD-ROM driver. Such a thing is produced by Canadian Prototype Replicas ☎ 0101 519 884 4412.
c) CDs – You'll be able to view PC and CDTV CDs, but in both cases, without extra hardware you'll be unable to use the majority. You'll be able to access the files, but not run PC programs. With CDTV discs, the majority use routines in the CDTV ROM which are not present on a standard Amiga. A few selected discs will work (for example, the Fred Fish Collection). ***JR***

SEEING DOUBLE

I have an A500 and a 2Mb A590 fitted on the side of the machine, can you please clear up the following points:
a) If I buy another A590 can that also have another 2Mb of memory?
b) Is there a limit to the amount of chaining or memory increases?
c) What happens when another A590 is present?
d) Would I have to take care with regard to programs storing files and overflowing from one A590 to another.

M Staples
West Sussex

a) Experts reading this one can wipe the smirks now... You can't connect more than one A590 to your machine because there is nowhere to put it! The plug on the back is a SCSI connector which is for data transfer and not for a RAM expansion. This effectively negates all your questions and I'll resist giving the typical humorous staccato: 1-*No*, 2-*No*... answer.

But I digress, to add more RAM you need a through-ported RAM expansion such as the Supra 500RX and the Cortex 8Mb (see last month's feature on RAM). For the extra hard drive you just need a suitable SCSI compatible box and power supply. These don't come cheap (does anything?) but you will get some good advice from Bob Lindsay at Omega Projects on ☎ 0925 763946. ***MS***

MAC'S BACK

I am writing about emulation, particularly the A-Max II Plus Mac emulator from ReadySoft.

I have a standard Amiga 1500 with Workbench 1.3, and I will soon be upgrading to Workbench 2, before buying A-Max II Plus – that is, if I *do* buy it. There are a few questions I would like to ask you about it.
a) How does it compare to the real thing in terms of speed, compatibility and performance?
b) Does it run the new System 7?
c) Would it be advisable to buy a hard disk and/or extra memory. If so, what should I buy and from whom?
d) Does it accept any or all peripherals for the Mac?
e) Is there any difference in colour, or screen modes, from the real thing? (What are the screen modes of the Mac?)
f) Will programs run as if they were being run on the Mac? Will there, for example, be any difference in colour? If so, would this affect any programs?
g) How does a real Mac compare to the Amiga in terms of speed performance, range of software, power, graphics, sound and animation?

Andrew Johnston
Holywood
Norn Iron

I can't speak for A-Max II Plus because at the time I answer this letter it has not yet been released. So based on A-Max II...
a) Compared to a Mac Plus, A-Max runs a little faster on an unaccelerated Amiga, at about the same speed as a Mac SE. Any 68020 or 68030 accelerator you fit into your Amiga will likewise accelerate the Mac side. Compatibility isn't really an issue, A-Max has been found to be extremely compatible, except with games – the list of software which has been tested successfully is way too long to print here.
b) ReadySoft says that A-Max II Plus will run System 7. How well it does so remains to be seen.
c) Yes. A-Max is compatible with most popular SCSI hard disk controllers, including those supplied with the Commodore A590 and the GVP series. See *Amiga Shopper* issue 12 for a comprehensive hard disk round-up.
d) Yes. For example Macintosh floppy disk drives, hard drives, CD-ROMs will all work with A-Max, along with things like modems and printers of course.
e) A-Max can be used with any monitor that can be connected to the Amiga.

The standard Macintosh display is 512 by 342 pixels, but A-Max lets you choose the Macintosh screen size you want to emulate from 512 by 342 up to 672 by 460. A-Max does not (yet) support colour, it works in black-and-white, emulating the Mac Plus.
f) Programs will run exactly as if they were running on a black-and-white Mac Plus, no problems.
g) A-Max is not a total replacement for the Mac. If you only want a Macintosh and intend never to use the Amiga side, then there's no doubt that you'll be better off buying a Mac.

As you already own an Amiga, however, A-Max is a cheaper way to own a Mac Plus as well, one that runs faster than a real Mac Plus. It is a most impressive. ***JW***

AGNUS ANGST

Firstly, I shall be grateful if you can advise me which Agnus I actually have.

Secondly, if it should prove to be the fatter Agnus, are there any dangers of damage to the board from personal static electricity when cutting and remaking the connections, and if so what precautions should be taken? On this matter, I am considering adding a further 1Mb of memory to my A590 hard drive, and the same query applies to this.

And, as a final query, my power-up screen always is in the short NTSC format, but programs usually load in the fuller PAL size. However, on some occasions a program will load in the short screen size, and this is particularly inconvenient when word processing. Is there any way that I can ensure loading with a full size screen all the time?

John Herbot
Marlborough
Wiltshire

From the figures you quoted in your letter, you have the 8372 Fatter Agnus chip.

There is always a danger from static electricity when you do anything inside your computer. Having said that, the risk is slight, and as long as you aren't removing chips with one hand whist stroking the cat with the other, there isn't any major risk. It's best to play safe and earth yourself whilst fitting the chips. With the power supply plugged in (but turned off!!) the metal shielding on the Amiga is connected to earth, so touching this with one hand whilst making the changes will keep your Amiga safe.

The last problem is due to a bug in the Kickstart 1.3 ROM. Sometimes the system will 'guess' wrong, and think it is an NTSC machine, limiting applications to a 200 deep screen. You can get rid of this by upgrading to Kickstart and Workbench 2.04 (where this bug has been fixed), or by adding the public-domain program *NoPalReset* to your startup-sequence. This will detect an NTSC system, and reboot if found. ***JR***

JARGON BUSTING • JARGON BUSTING

Chip RAM – The area of the Amiga's memory directly accessible by the custom graphics and sound chips. Originally a maximum of 512K, newer machines fitted with the fatter Agnus graphics chip can access 1Mb, enabling smoother animations and more screens to be displayed at once. The new A500 Plus comes with an Agnus chip capable of addressing 2Mb of Chip RAM.

Compugraphic fonts – Rather than a simple bit-mapped image of each character, which grows more jagged with magnification, a Compugraphic font represents the shape of each character within the font as a mathematical equation of the outline. Consequently, as the magnitude of the character is varied in printing, no information is lost and the result always looks smooth.

Dot matrix – The cheapest method of printing. Shapes are made up of an array or matrix of ink dots, created by a series of pins impacting against an inked ribbon. The closer the dots are together, the higher the resolution and quality of the result.

SWITCH AND CHIPS

I have an Amiga 500 with 512K RAM, a Zydec 512K trapdoor memory expansion, a Roclite external drive, a Star LC-10 MkII printer and (according to the PD program SysInfo) I have the 8372A 'Fatter Agnus'.

I have two questions for you:
a) I am aware that my particular computer can have 1Mb of Chip RAM by altering the motherboard slightly. I am considering having this done, but I read somewhere that some software does not run unless there is some Fast RAM installed. Could you put me on the right path and explain this please?
b) I have just acquired *Wordworth 1.1* and I am having trouble with printing. When dip switch 1-8 is set to ON the lines in the text are too close together, when it set to OFF the lines are too far apart. Help!

Paul Cherry
Hollywood
Birmingham

Only a very badly written piece of Amiga software would refuse to run if no Fast RAM was present. Personally I know of no such programs. The main thing to worry about is that the RAM chips in the trapdoor memory expansion need to be 120 nanoseconds or faster in order to be used as Chip RAM after the modifications.

The *Wordworth* problem looks like you've got the line spacing set wrongly within *Wordworth* itself; your printout examples are at 8 lines per inch single and double spaced. Select all the text and set it to Auto Single in the Format/Paragraph requester, that should sort it out.

And make sure your Workbench printer preferences settings are also 6 lpi, not 8 lpi.

The dip switch you are messing about with just sends an extra line feed (OFF) or not (ON) at the end of every line. ***JW***

TAPING IT

Is there any way of recording animations made with *Deluxe Paint* directly to VCR from my Amiga 500? Or do I need a genlock or something similar? I've tried putting my aerial lead into the VCR input socket from the RF socket on the modulator, and to the Video composite socket as well. Neither of these work. Help!

Rhydian Lewis
Pursley
Gloucester

Yes it is possible to record *DPaint* animations direct to videotape. And no, you don't necessarily need a genlock. A modulator will suffice if quality isn't a paramount concern. So let's see where you're going wrong.

You have to realise that there is a great difference between RF and composite video signals, and they are *not* interchangeable. But if you connect from the RF output of your modulator to the RF (aerial) input of your VCR you should have no problems, assuming that your VCR is correctly tuned.

On the other hand, attempting to put an RF signal into a composite input will not work. You'll also find that you will probably have to flick a switch somewhere on the VCR to select between Tuner and Camera if you wish to record from an external (composite) video source attached to the VCR's composite input. ***GW***

BOOTLEG WORRIES

Is it absolutely impossible for a virus to be copied on to a disk that is write protected? And can it stay in the machine for more than 30 seconds?

This problem doesn't directly affect my desktop publishing, but it does make me wonder that I might have some bootleg software. It concerns *PageSetter II*.

When printing, a box appears on the screen saying 'currently printing page #x' where 'x' is the page number, but beside that it says 'box #x'. This number never stays still, continually going from 1 to the highest number.

Another thing: are the structured graphics in *PageSetter II* really structured?

When I draw one and then attempt to make it bigger by using the handles, the outline of the box gets bigger, but not the contents of the box.

RJ Morgan
Taunton
Somerset

The 'box' *PageSetter II* is printing refers to the bounding boxes you have imported your text and graphics into – the things with the handles around the edges – and while printing it will cycle from 1 to the number of boxes on your page, and go through this cycle a few of times depending on what's on the page.

It's not a virus or bug, it's just *PageSetter II* letting you know what it's doing.

And yes, structured drawings in *PageSetter II* are really structured. To make them bigger or smaller - that is, to 'rescale' them - you need to hold down the Alt key while moving a handle. The same goes for bitmap graphics, by the way. ***JW***

WHICH IS BEST?

Which is better for printing graphics, a Star LC-200, LC24-200 or a Citizen Swift 24? Please advise me.

Matthew Solomon
Wellingborough
Northants

Are we talking colour or monochrome here? For monochrome I'd say there is little or no difference between the Swift 24 and the LC24-200, for colour I (personally) prefer the look of a 9-pin dot-matrix dump, so would recommend the LC-200. To be fair I should point out that many LC24-200C owners would disagree with me, so the only sensible answer to your question is to suggest that you see output from all three printers and decide for yourself. ***JW***

DISAPPEARING RAD

I have a Power Computing 1.5Mb trapdoor expansion configured as 1Mb Chip and 1Mb Fast RAM. During everyday use it works just fine – until I try to use RAD. When I try to make a bootable RAD disk and re-boot the machine I am left with the "insert disk" prompt. Is this something to do with the board being configured this way? It seems to work fine on my friends machine which has 2Mb Fast RAM fitted.

I Morris
Herne Bay

Annoying, isn't it? I have come up against this one time and time again with 1.3 Kickstart machines. RAD just seems to die during the re-boot process. You can get it back by re-mounting it – but that isn't the answer. However, I can put your mind at rest and assure you, your Power 1.5Mb expansion is working fine and you have not damaged the machine.

One possibility is you have a 1Mb Chip machine and you have not fixed SetPatch accordingly. This command patches a number of bugs in the Kickstart ROM – one of which is that the RAD disk does not work correctly with 1Mb Chip RAM. Just check your startup-sequence to make sure it reads:

```
SETPATCH >NIL: -R
```

That might cure the problem. However, a much better solution is to upgrade to Workbench 2. In this version RAD works exactly as advertised and full instructions can be found in the Little Blue Workbench Book published recently by Kuma. Price £14.95; ISBN 0-7457-0055-1. ***MS***

TRANSWRITE TROUBLE

I use an Amiga 500 Plus and bought the *TransWrite* word processor after reading favourable reviews in this magazine.

I am very pleased with *TransWrite*, which is quick and simple to use, although in combination with my printer a number of difficulties have arisen. The printer is a Star LC24-10 and was bought after an unhappy trial with a Citizen 124D.

I always boot-up from Workbench before attempting to print anything that I have prepared using *TransWrite*. I have the Nec_Pinwriter printer driver in use after reading the recommendation on page 18 of the first issue of *Amiga Shopper*. I have tried the EpsonQ driver but can't detect any improvement or change in the problems.

Is it really necessary to swap over to the Extras 2.04 disk in order to click on the Init Printer icon before booting up with *TransWrite*? It seems like a lot of disk changing to achieve... what? Although I find I cannot get an underline unless I

boot initially with Workbench, clicking the Init Printer icon seems to make no difference at all. Should it?

The excitement in the computer press at the launch of the Amiga 500 Plus made much of the Compugraphic Fonts, which are now provided on the new Fonts 2.04 disk.

TransWrite does not seem to to have any ability to import any 'outside' fonts at all.

I can certainly print my text using the four fonts provided by the Star, but it goes against the grain for me to be unable to use the latest facility. Even if I cannot use these fonts via *TransWrite*, when and how can I access and use them?

Next problem. My printer gives me several options of print size, which I can control from the front panel – things like 80, 96, 120, 137 and 160 columns using a combination of Pica or Elite, semi-condensed or condensed, or proportional, all of which I can use when printing a *TransWrite* file.

However, the printer manual also gives the option of using double or quadruple height characters in normal or double width. This is where I run into problems as the escape codes required by the printer to generate such extra-size characters are not accepted by *TransWrite* – they cause an 'illegal esc string' message.

To be fair, the *TransWrite* manual does say "not all ... (of *TransWrite*'s own) ESC series ... commands will work on all printers, and *TransWrite* does not interpret the codes at all and so it's hardly surprising that it fails to accept other, different escape codes.

How can I access these variations in character sizes offered by the printer?

According to the *TransWrite* manual the program will import graphics, and so on, from *Professional Page*. Now, that is a very expensive product, costing several time more than I paid for *TransWrite*.

I feel that I might sometimes find it useful to have graphics in my various printed ramblings, but I would really rather put that sort of money towards a hard drive or extra memory. Is there a more economical way to use graphics with *TransWrite*?

Both *TransWrite* and the Star LC24-10 recognise 11in and 12in paper lengths, while Workbench offers three others besides, including the popular A4 size (11.66in).

I assume that my current difficulty in maintaining correctly spaced top and bottom margins will disappear if I use 11in paper instead of A4?

WT Arbon
Wannock
East Sussex

What the Init Printer program does is read your Workbench printer preferences and send the control codes that set up the printer to that configuration. *TransWrite* sends most of these set-up codes anyway, so there's no real need to use Init Printer – its job in life is to allow you to set-up the printer correctly before printing from something that doesn't read your preferences, like a simple text reader for example, or from redirection to PRT: via the Shell.

As you have discovered, *TransWrite* has no fonts support. This is because it was designed as a program with which to bash out words, rather than for formatting and printing documents.

Any program that can load Amiga bitmap (screen) fonts can utilise the new Fountain system to build different sizes of screen fonts on the fly from the Compugraphic data. But it is important to remember that once on the screen these are now bitmap fonts, with a resolution of 75 dots per inch.

To output them at the highest resolution your printer is capable of the program would need to directly understand and support the Compugraphic format. At the moment none of them do. Instead, word processors like *Wordworth* and *ProWrite* scale up the bitmap fonts to between two times and four times their screen size, and then scale them down again for printer output, thus achieving a higher resolution output. This takes a very long time, probably longer than is practical.

To control every aspect of your printer you will need a word processor that allows you to send any printer-specific control or 'escape' code of your choice. TransWrite doesn't allow this, in fact the only Amiga word processors that do are *Word Perfect* and *Protext*.

You've misunderstood the manual with regard to graphics. *TransWrite* will not import graphics. Period. What the manual is saying is that if you want to mix graphics with your text, then you can import text prepared with *TransWrite* into *Professional Page*. A more economical way would be to buy a word processor that supports graphics, such as *Wordworth*, *Pen Pal*, *Excellence* or *ProWrite*.

To sort out your top and bottom margins problem, select the US Legal paper size (14in) in the second of *TransWrite* printer settings requesters and in the first requester change the number of lines per page to 70 (which equals 11.67in at six lines per inch – A4 size). ***JW***

BEST BUDGET WP



I am thinking of buying an Amiga 500 Plus both as a games machine and for word processing. I am about to start teacher training this year and as my degree is in Chemistry I need a word processor package that has italics, superscripts and subscripts. I would prefer one that has left, right and flush justification as well.

My problem is the financial side. Do you know of a word processor – commercial or shareware – that is £50 or less that has these features? Oh, and page numbering too.

If not, how much more will it cost?

Also, I was just going to buy a cheap 9-pin printer, like the Star LC-20 or Citizen 120-D+, so could you advise me on which is the best and if it will work with whatever word processor package you suggest?

James W Morrison
Kilwinning
Scotland

There are no sub-£50 word processors that have all the features you require. The closest are *Scribble!* (V3.05), which can do everything you ask except right justification (it has only left and flush), and *TransWrite* (V2.0), which can do it all except superscripts and subscripts.

For something that has all the features you require – such as *Wordworth* or *Protext* for example – you will need to jump up to the £100-plus bracket.

The Star LC-20 and Citizen 120-D+ are both excellent cheap 9-pin printers. Both are Epson compatible and will work with any Amiga word processor and the EpsonX drivers provided on the Extras disk. ***JW***

PARTITIONING BLAME



I recently bought a GVP 52Mb Impact Series II hard disk which is configured with 4 partitions. The software disk that came with the drive however was wrongly set up and would not allow me to configure the drive from the auto install option, when I partitioned the drive from the manual option the drive would only format to 600 cylinders as opposed to the correct amount of 1215, now that I have a fully working installation disk I still can't restore the drive to the required 1215, even when I type in the correct values and parameters from the manual set up. Considering the drive seems to work perfectly well and that I can access all the 52Mb (49Mb in real terms, to coin a Tory phrase) could you explain a little about cylinders and the make up of a hard disk and whether I would benefit from the extra 615 cylinders.

Also in *AS* 12 I read that you should never ever low level format a hard disk, could you please say why because I once owned a CBM A590 and the manual gave instructions and reccomended a low-level format.

John Glover
Blackwater
Camberley

Modern hard disks have a wonderful capability to pretend to be a different configuration to the configuration they really are. This leaves the actual configuration up to the controller. The Controller will interrogate the SCSI drive, find out what the physical size is, and will work out what is the best way for it to talk to the drive (different configurations can work out faster, or more memory efficient on the host machine). You can ignore this and leave the controller to decide which is the best way to address the disk.

The low-level format is not necessary on modern disks, as they often have a phyiscal format on the disk which is impossible to recreate through low-level formatting, so on some drives (although not on any SCSI drives I have seen) it is possible to physically damage the drive with a low-level format. The XT drive supplied with the A590 is a drive that can be low-level formatted by the user. Unless the disk is proving unreliable I wouldn't even reccomend a low-level format with this drive. Always check with your supplier whether a low-level format is required. It is not required with any of the Quantum or Fujitsu drives currently sold. ***JR***

WOBBLY GENLOCK



I've got a problem with my Amiga 2000 which is fitted with an A2300 genlock card. Every time I boot from cold with the genlock switch in "Computer only" position the screen is filled with black horizontal lines for 3 or 4 minutes. When they finally slow down the screen information is flickering violently. Eventually the

MEMORY ET AL

I have a 1.3-based A500 which has been expanded to 3Mb using a conventional 512K trapdoor expansion and a 2Mb SupraRAM expansion module which connects to the machine via the expansion bus. Having just bought a 52Mb GVP Impact Series II hard drive to complement my system, I wonder if you could answer the following questions.
a) Is it possible to put extra memory inside the hard drive and run it in conjunction with the SupraRAM?
b) How do I transfer PD programs on to my hard drive?
c) Can you recommend a good book that documents using hard drives on the Amiga?
d) Is it possible to connect the GVP drive to a CDTV?

Alan Cousins
Brighton
East Sussex

a) Yes. Thanks to the Amiga's powerful AutoConfig hardware, both the SupraRAM and the RAM inside your GVP drive can be used simultaneously simply by connecting the GVP drive to the SupraRAM's pass-thru connector.
b) This depends entirely upon the program you are trying to copy. If the program doesn't need any external files to run, then simply drag its icon across. If it does need extra files, then the easiest way to copy it across is to either copy the directory that contains the program or use a directory utility such as *SID* to copy all the program's files across on to your hard drive.
c) Hard drive books are surprisingly thin on the ground. In fact, I haven't seen a single book on the subject! Come on you book authors – get writing!
d) Put simply, no. The CDTV doesn't have an expansion bus. ***JH***

whole screen becomes stable and stays steady while the machine is warm – I can even turn it on and off with no problems.
Please diagnose, and advise.

M Gilicz
Bispham
Lancs

First check that your input video signal is stable. If all seems OK, then its likely that your A2300 card is misaligned electronically, with one possibility being that the VCO (Voltage Controlled Oscillator) is off frequency. I'm afraid it's a job for Genlock Repair Man, and I would contact Commodore (0628 770088) for advice on where to send it. ***GW***

SECOND MONITOR

I have a Philips CM8852 monitor, which is supposedly of higher quality than the CM8833, which I have been using with my Amiga 2000 for quite some time and all is well. I also have a TV which is on the way out and what I would like to be able to do is to use the Tuner output (video out) of my Ferguson Videostar VCR and use it with the CM8852. I've tried many different SCART leads but to no avail, as all I get is a blank screen – though I do get sound). The monitor also has a TTL RGB socket. Which socket should I be using and are there any mods needed to my SCART lead?

D Griffiths
Cardiff, S Wales

From your letter I'm afraid to say I'm a little confused by exactly what kind of connectors and signals you are trying to connect from where to where. So I am assuming that your VCR also has a SCART connector and that this is what you are using to connect to your monitor.

It sounds to me as though what's happening is that your monitor is expecting to receive RGB signals through the SCART connector, but they aren't there. The reason for this (if I understand your letter correctly) is probably that the output from your VCR does not provide them. If this is the case then you will have to use the composite video output from the VCR to the 8852's SCART composite pins instead, and switch your monitor to composite input to see a picture. The connections on the monitor SCART are likely to be:
Pin 20 – Composite Video Signal
Pin 17 – Composite Video ground
You'll have to consult your VCR manual to make certain of its video connections, but if they follow convention they should be the same as above. ***GW***

CANNOT OPEN PRINTER

I have a Commodore MPS-1550C colour printer which I use with *Pen Pal*, as well as with other packages.

My first question is that in the instruction manual it states that the printer will emulate three modes: IBM G.P., Proprinter and Epson JX-80; what is the difference between the three modes, and is there any advantage in using one over the other?

Secondly, I cannot get the printer to work in colour. I have set the printer to the Epson JX-80 setting, selected colour ribbon, installed an Epson JX-80 printer driver and ensured that Colour is selected in Workbench printer preferences. There is paper in printer etc, *Pen Pal*, as well as other programs, just replied with 'cannot open printer'.

Can you assist, and even advise me where I can obtain a suitable printer driver if the JX-80 one is not right?

KR Yarrow
Maltby
S Yorks

Your first question is far to complicated to answer in these particular pages. I know that sounds like a cop out, but the differences are enormous and would takes ages to describe, let alone explain. Suffice to say that given a choice, Epson emulation is usually the best one to plump for.

Your second problem has got me stumped. Are you saying that *Pen Pal* will print the document in mono OK but the error message comes up when you try to print in colour?

I can't understand that because the error message you are getting - which is actually 'cannot open printer device' I believe? – means that either the printer is being used by some other program (which it isn't, is it?) or that one or more system files like 'devs/printer.device' or 'devs/parallel.device' are missing from the disk you booted from, in which case nothing would print, not even in mono.

Try booting from your original Workbench disk in DF0: and run *Pen Pal* from a disk in DF1:. See if it still won't open the printer device then. If you've been making your own boot disks I've got no way of tracking down the problem unless you send me a full directory listing of the disk and a printout of your startup-sequence and all your printer preferences settings.

The JX-80 driver you have should work OK-ish with the MPS-1550C, but you might get better results with the Star9Plus driver on Jamdisk 5 (from *JAM* on 0895 274449). ***JW***

ABOUT PRO PAGE 3

When are you going to review *Professional Page 3*? Can you tell me if it will only use Adobe Type 1 fonts with a PostScript laser printer? Can you let me know if there is a 'crop picture' facility as I have seen it used in *Timeworks* on the PC. Can you tell me how much memory you use for DTP? Can I get Olde English text fonts for *Professional Page 3*?

Michael D Ault
Pelsall
West Midlands

I'll be doing a comparison of *Professional Page 3.0*, *PageStream 2.2* and *Saxon Publisher 1.2* next month.

In the meantime, to answer your questions, *Professional Page* has always had the ability to crop pictures, plus you can rescale them and rotate them. Version 3.0 comes with a FontManager program that converts Adobe Type 1 fonts into Compugraphic fonts, and these can of course be output to any printer, not just PostScript laser printers. There are various Adobe Type 1 fonts available that could be considered as 'Olde English', you'd need to hunt them down from public domain libraries. George Thompson Services (0707 664654) has a large range.

I use 9Mb of memory for DTP, 1Mb of which is graphics (Chip) memory. I always tell people that 4Mb is the minimum for serious work, but *Professional Page 3.0* is rather more hungry for memory than earlier versions, so 6Mb might be a better figure. The absolute minimum is 2Mb. ***JW***

BOX CLEVER

Can you please help me by explaining what a Checkmate box is and where I can obtain it. I've heard it mentioned quite a few times within the pages of *Amiga Shopper*, but I haven't a clue what it is.

TJ Ludlam
4th Armoured Division

The Checkmate box, or to give it its real name the A1500 (not to be confused with Commodore's own A1500) is a replacement casing for the A500 that makes the machine look like the Amiga A1000, complete with detachable keyboard and two internal drives. It costs £200 and is available from Checkmate Digital Ltd ☎ 071 923 0658. ***JH***

OH YES I CAN

You probably can't help with this one as the product is so new, but do you know of a printer driver which can make best use of the new Epson ESC/P2 language?

I am very interested in the new LQ-100, its paper handling, enhanced graphics and rescalable fonts. Epson tells me that they have offered one of their new printers to Commodore to enable them to write

an Amiga driver but Commodore has "declined the offer".

If I can't access the features, they aren't worth having! Since Epson and Commodore won't help, any information would be most welcome.

James Gilmore
Coleshill
Birmingham

A printer driver that understands the ESC/P2 language isn't going to be of much use unless the software doing the printing understands it too. ESC/P2 is so new that it will take a little while for the software to catch up.

But ... (cue fanfare) ... there is one Amiga word processor that can use the scalable fonts features of the Epson LQ-100 - the very latest update (Revision 6) of *Wordworth V1.1*. ***JW***

TURBO FAILURE?

I bought *TurboPrint Professional*, and it works with *Deluxe Paint III*. If I attempt to load it with *Deluxe Paint IV* a system message appears saying 'Couldn't open font dpaint.font'. Same with *Wordworth 1.1*. Error message reads 'Can't open library files, make sure that *Wordworth* is installed properly'.

What am I doing wrong?

Robert Sharpe
Hemel Hempstead
Herts

Well, for a start neither of those error message has anything to do with *TurboPrint Professional*.

The *Deluxe Paint IV* message is saying that its required font is not in the FONTS: directory. This is the directory called 'fonts' on whatever disk you boot from.

It'll be in the 'fonts' directory on the *Deluxe Paint IV* program disk. If you want to copy it to your Workbench disk (because that is the disk you are booting from) put Workbench in DF0:, the *Deluxe Paint* IV program disk in DF1:, open a Shell and type...

```
copy df1:fonts df0:fonts all
```

Now when you load *Deluxe Paint IV* it will be able to find dpaint.font in FONTS: (the 'fonts' directory on your Workbench disk).

If you boot from the *Deluxe Paint IV* disk, FONTS: will be the 'fonts' directory on that disk.

As for the *Wordworth* error, what could be plainer? It is telling you that it can't find some important file or files that it needs to be able to run. If you follow the correct installation procedure you will be able to boot from the *Wordworth* disk and run the program without problems, you can't simply boot from Workbench in DF0: and run Wordworth from a copy of the supplied disk in DF1:.

If you continue to have problems installing *Wordworth* you should contact Digita's Technical Help Dept ☎ 0395 270273. ***JW***

GUILTY PARTY REPLIES...

By the time I had finished Mark Smiddy's review of the KCS Power PC board I had finally decided to send off for one. Then I read the beginners inset and was completely put off by the final paragraph which asserts I cannot expect a full graphics screen. What will I get – a third, half, what?

DG Clarre
Brentwood
Essex

The source of confusion reads: "It's worth mentioning the real PCs fill the whole screen – this is not true of the current batch of emulators." Sorry about that – I could have been more verbose. You will get a complete screen but some will be a little squashed. This is because real PC monitors fill the screen no matter how many "lines" are being displayed.

Imagine, if you will, a 200 line graphics display. On a PAL Amiga this is emulated by using a 256 line mode. That leaves 56 lines "spare" – 28 above and 28 below. A PC monitor stretches the screen so the whole area is occupied by the 200 available lines. The resultant display is a little squashed vertically (by about 22 per cent) but with many applications this will make no real difference. In either case the EGA and VGA emulations are available in 350 and 480 line modes where the "squashing" is less pronounced.

This sort of thing is not practical with TV monitors although it may be possible with the Super Denise and a multi-sync display. Since this is a combination of new (Super Denise) and expensive (multi-sync) hardware, the guys at KCS have opted for the more usable solution. I hope that clears this one up. ***MS***

JARGON BUSTING • JARGON BUSTING

EGA – Enhanced Graphics Adaptor. Somewhere between CGA and VGA. Offers a higher resolution and better range of colours than CGA. Considered to be the minimum workable colour set up.

PAL – One of the main TV colour coding system (with the exception of France's SECAM system), which is in use around the world and was developed in Britain. PAL refers to Phase Alteration Line. In fact, there are several hybrid PAL systems in use, all of which are slightly different.

PC – IBM PC compatible computer based on one of the Intel 8067 or 80xxx series CPUs, and with similar hardware/software configuration. IBM PCs are pretty much the standard in the business world; consequently they have the best selection of software available for them. There exist several emulators for the Amiga to enable it to run PC programs.

PostScript – A powerful mathematical language used to describe graphics and text images to compatible printers. Because it does not rely on a pixel system, objects so described can be scaled and rotated without distortion or loss of detail.

VGA – Video Graphics Array. High resolution colour or monochrome graphics system for the IBM PC. 80 columns by 25 or 50 line text and a huge range of colours – sometimes 256 (on screen) at a resolution of 1024x768.

COLOUR DJ DTP

I am interested in buying *Professional Page 2.1*, along with the Hewlett-Packard DeskJet 500C colour printer.

I have 512K of Chip RAM and 512K of Fast RAM, can you tell me if I need any more to use it successfully? Does it come with an Amiga driver? If not, where can I get one to utilise the printer fully?

Can I print graphics dumps from *Deluxe Paint IV* with it, and what sort of quality can I expect? I want to use it to produce professional looking reports with colour picture inserts.

Stephen McGill
Kilmarnock
Scotland

Yes, Stephen, you need a lot more memory. I'd recommend at least another 2Mb. But be prepared to run into display and printout problems because you have only 512k of Chip RAM, you really need 1Mb minimum.

You'll have to get your machine upgraded by a professional, or sell up and buy an Amiga 500 Plus which comes with 1Mb of Chip RAM as standard, upgradeable to to 2Mb Chip RAM, plus you can add more Fast RAM of course.

There won't be an Amiga printer driver supplied with the 500C, and there hasn't been a proper one written yet. The best one I know of so far is on Jamdisk 8 (from *JAM* on 0895 274449) but this has a 10 inch length restriction built into it. Will there ever be a better one? Don't know. We can only wait and hope.

The Jamdisk 500C driver will work with both *Professional Page* and *Deluxe Paint*, and the output quality of the printer will depend on what you are printing and they type of paper you are printing on to – proper coated inkjet paper is best, but it's also expensive. You shouldn't expect anywhere near photographic quality colour from the 500C, but it's easily the best there is currently at that price.

I strongly suggest you see a demonstration of the printer in action, preferably hooked up to an Amiga, before you part with your money. Perhaps Amiga Centre Scotland (089 687 583) in Walkerburn can assist? ***JW***

OH, CIA. OH BROTHER!

My Amiga 2000 recently developed a very unusual fault – the WIMP system seemed to stop working. I could still access programs from *SID* and other menu-based software, but when I attempted to use the Workbench the machine started to lock up. I have returned it to FMG twice (a total of eight weeks in all) and was informed that the CIAs were faulty and that the RF choke in the parallel port had also failed.

The machine is fitted with an A2091-40 hard disk and a Rombo Vidi Amiga.

Navid Qureshi
Blackpool

The CIAs (Complex Interface Adapters) are responsible for a number of things in the Amiga system – including some of the peripheral system timing. Failure of one of these could give rise to the fault you describe and the cause is probably Vidi. I'm not suggesting that Vidi Amiga is responsible for destroying CIAs, this is a fairly common fault with the Amiga. Perhaps Rombo should look at its design and see if the burden on the CIAs can be eased?

The same fault can be caused by plugging in a sound sampler or even a printer when either machine is switched on.

Always follow the golden rule – *never* insert or remove any peripheral unless you switch the power *off first*! ***MS***

First past the post

Are you driven dotty by your printer's quality? – SaxonScript Professional, the new PostScript interpreter, could be the solution



***SaxonScript*'s most powerful feature is the ability to display colour PostScript files as colour separated composites on screen**

There are many advantages to printing with PostScript, not the least of which is that PostScript output is 'portable across many platforms' – a piece of jargon which means that PostScript files can be saved to disk and transported to and understood by another computer, such as a PC or Macintosh. *SaxonScript Professional*, which I'm reviewing here is a PostScript interpreter for the Amiga. In what ways can this benefit you, and does it do a good job?

With PostScript you can 'proof' your work at home on your battered old 9-pin dot-matrix printer, and then take the PostScript file to a bureau for high resolution output on a laser printer or imagesetter.

Another advantage is the fact that PostScript handles greyscales in a special way called 'halftoning', which is nothing at all like the results gained from the Halftone dither setting in Workbench Preferences – true halftoning gives you complete power over the 'screen frequency' and 'screen angle'. These features are especially important for colour separations, but they also enhance the quality of monochrome output.

FANTASTIC FONTS

And then there's the fonts. PostScript fonts are of a much higher quality than even the Compugraphic or other outline fonts supplied with Amiga desktop publishing packages. It's true that you'd be hard pushed to tell the difference if you're printing to a 9-pin or 24-pin dot-matrix, but on inkjets and laserjets (and imagesetters, of course) the increase in quality *can* be seen.

In fact the only area where PostScript is inferior to traditional publishing methods – by 'traditional' I mean the way things used to be published before the advent of desktop publishing – is in the reproduction of photographs; even at 2,540 dots per inch, a photograph that has been scanned and output to a PostScript device is unlikely to be as sharp as a photograph published in the traditional manner by a technique known as 'mechanical separation'.

EXPENSIVE HABITS

The greatest disadvantage of PostScript lies in the cost. Laser printers which have PostScript capabilities are expensive to buy, expensive to run, and expensive to have serviced and repaired. And even then you get only 300 dots per inch, unless you want to cough up about £6,000 for a 1,000 dots per inch device.

DOWN THE BUREAU

The alternative to owning a PostScript printer is to take your PostScript file to an output bureau. Typically you will pay about £10 per page for imagesetter output, maybe half that for bulk orders, and you'll be getting at least 1,270 dots per inch. The problem is that it seldom goes right first time – we're all human, we all make mistakes. But at £10 a time we can't afford to make mistakes.

What we need is a way of making sure beforehand that the PostScript file we have given to the output bureau is correct. It's all very well being able to see your page on the screen in the desktop publishing program, and it's all very well checking a proof that has been output to a dot-matrix printer, but there's nothing like the feeling of security you get in your wallet knowing that you've seen the actual PostScript output and it's all hunky-dory.

This is especially important if we're having colour separations

Did you know...

...that PostScript was actually invented as a programming language to control a graphical shipping simulator?

...that PostScript is used to produce the screen display for the NeXT computer, meaning that anything and everything that appears on the screen is quickly rescalable?

BEGINNERS START HERE

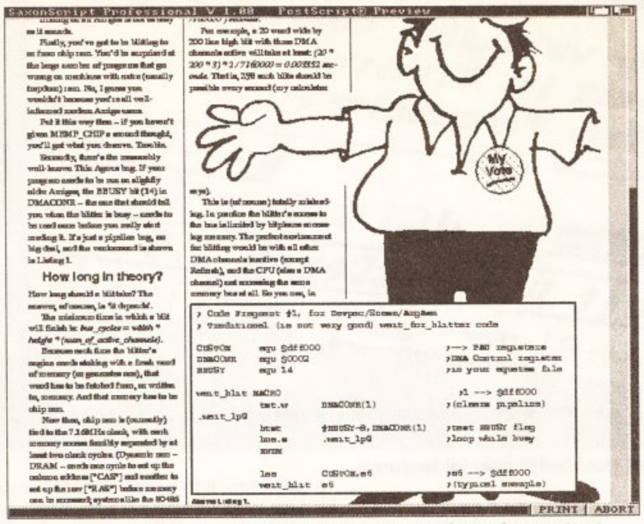
PostScript is a page description language.
Instead of the computer sending a bit by bit map of the page, composed of line after line of small black dots separated by white space where required, it sends programming instructions that describe the 'elements' of the page and where to position them. These elements are things like lines, boxes, fill patterns and characters.

Although not initially written for the purpose, PostScript has become the universal language of desktop publishing, but to be able to use PostScript you first need a PostScript interpreter – a program that can understand and carry out the instructions being sent by the computer. Usually this interpreter program is part of the laser printer or imagesetter that will be doing the actual printing, which is why PostScript printer output isn't something your average home desktop publisher worries about too much.

But of course if a PostScript interpreter can turn the page description language instructions into an image that gets 'displayed' by a PostScript printer on a piece of paper, there's no reason why the same thing can't be interpreted and displayed on a computer screen.

That, in a nutshell, is what *SaxonScript* does – it turns the PostScript instructions into a bitmap which is held in memory and can be displayed on the Amiga's screen and printed to a non-PostScript printer.

PostScript is not something beginners take to easily; like any complex programming language the whole subject is wrapped in a jargon and a mystique that can take years to come to terms with. Happily you don't have to learn how to program in PostScript to be able to use it – the applications which support PostScript will be doing that job for you so that all you have to do is accept the default settings and click GO.



Very quick previews can be achieved by selecting a low output density in Workbench printer

done, which means four pages of output for every actual page in the publication.

CHEAPER SOLUTION

SaxonScript opens up the whole world of PostScript to you – including colour PostScript – for a fraction of the cost of a PostScript printer.

Setting up *SaxonScript* is described in detail in the manual, and it needs to be done properly with the initial correct entry of your registration number else the system will not work. And if I tell you that the hard drive installation procedure is described in the manual before the floppy disk installation procedure (which takes up five pages) you might guess that while running *SaxonScript* from floppies is possible in theory, in practice it is going to be a little cumbersome. And you'd be correct.

Apart from the fact that there are several different 'modules' which the system needs to access to carry out different jobs, there's the Virtual Memory.

VIRTUAL MEMORY

Virtual Memory means using disks instead of memory to temporarily store or 'cache' data. A typical A4 PostScript page needs a Virtual Memory cache of around 600,000 bytes – you don't need me to tell you that it is going to take a while for *SaxonScript* to create and read such a large cache from floppy disk. And if you are using downloadable fonts the size of the file can easily grow to a megabyte or two, in which case 880K floppies are no use.

With a hard drive based system this presents no problem, indeed it is a positive advantage as it means that *SaxonScript* uses as little memory as possible, allowing you to multitask safely with your desktop publishing program.

Not that you *have* to multitask, because the PostScript interpreter part of SaxonScript isn't so much a program as a 'device' – you know, like RAM:, PRT:, PAR:, SER: and so on.

SaxonScript's device is called PSC: and there are two ways of using it. If you have plenty of RAM – 4Mb or upwards I would say – then you can multitask and simply direct the PostScript output to PSC: within your DTP program's PostScript Output facility. This initiates the interpreter, which will either give you a screen 'preview' of the output or, after it has finished building the whole page, pass the output to PRT: and thus to your printer.

The second way is to use your DTP software to send the PostScript output to a disk file and afterwards use the AmigaDOS Copy command from a Shell or CLI to send the file to the PSC: device.

This method is actually more flexible than the first as you can more easily specify command line parameters which affect the results.

EXTENDED ABILITIES

SaxonScript calls these parameters 'file name extensions', although they are more like the options or switches you use with AmigaDOS commands.

There are nine of them to choose from, and some can be combined to further control the various aspects of the interpreter.

To start with *SaxonScript* has two output modes, delayed and immediate. Delayed mode – which uses the command and file name 'copy filename to psc:d' – is for low memory situations; the idea is that you supply the string 'psc:d' as the destination to send the PostScript file to from your DTP program, then quit the DTP program to free up memory and double click *SaxonScript*'s Dump_Buffer icon, which runs the interpreter.

SaxonScript has a Preferences program in which you can specify delayed mode as the default to save you having to remember the 'd' after 'psc:'.

Immediate mode – which uses the file name 'psc:i' – loads the interpreter immediately. If you've specified delayed mode as the default preference the 'i' after the 'psc:' will override it, and vice versa of course.

There are two more choices in the Preferences program that can be saved as defaults, preview (screen) output or printer output. If you have selected printer output, an output file name of 'psc:prev' will override and give you screen output (preview) instead; there is a Print button in the preview window should you want to print what you see without having to ask the interpreter to interpret everything again.

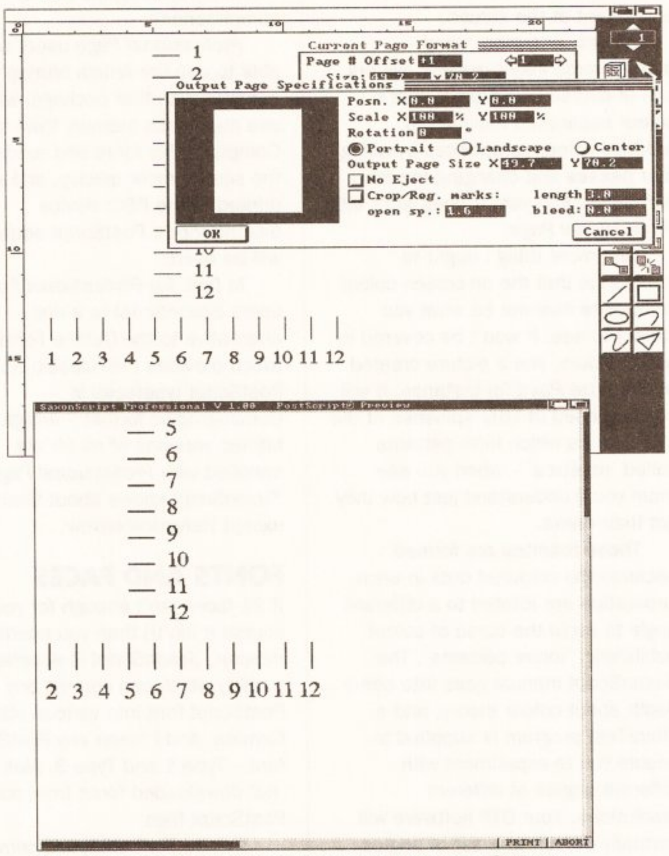
I mentioned earlier about how PostScript files can quickly grow to enormous sizes. Happily there is a standard compressed format for PostScript and these can be created

> **"There are thousands of public domain and shareware PostScript fonts available, all of which can be used with SaxonScript Professional."**

by using the 'psc:comp' file name. Although file sizes will normally only shrink by 10 per cent or so, compressed or 'binary' PostScript files actually print faster than uncompressed ones, especially if they contain bitmaps, provided the PostScript device that is doing the printing understands the compressed format; some don't.

The are more features for converting PostScript files into other formats. The 'psc:iff' file name converts to a standard IFF ILBM; you get the choice of conversion to 16 greys, HAM (4,096 colour), 8-bit (256 greys) or 24-bit (16 million colour). Once the PostScript file has been interpreted you are given a thumbnail representation on the screen and can crop and save just a small area of the image if you like.

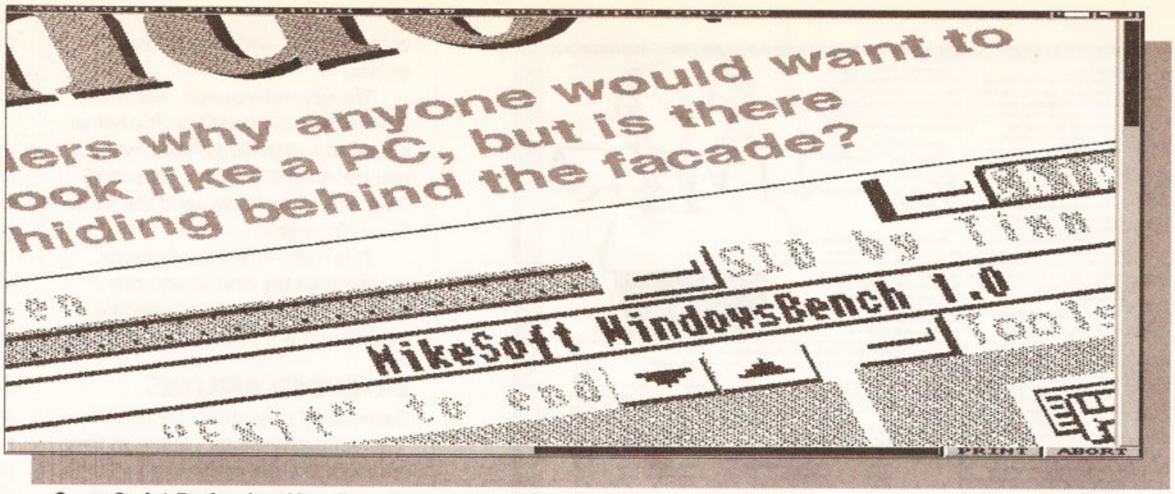
PostScript files can also be converted to Encapsulated PostScript (EPS) format using the 'psc:eps' file name, and to the DR2D structured



The A4 page size problem: above you can see what was output from *Professional Page*, below is *SaxonScript*'s interpretation – about 4.2 picas (two-thirds of an inch) have gone missing from the top, and 1.6 picas (quarter of an inch) from the left

drawing format using 'psc:dr2d'. I've had mixed results with the DR2D conversions, *Saxon Publisher* loads them perfectly, PageStream doesn't want to know. I don't trust *PageStream*, so let's give *SaxonScript* the benefit of the doubt.

The final conversion feature is to AEPS, a format similar to EPS except that the resultant file also includes an IFF ILBM version of the same graphic, the idea being that you are able to view the bitmapped IFF version of the graphic on-screen while the structured EPS version is what gets printed out. This is a great idea, but the file format needs to be supported by the DTP software – *SaxonScript*'s sister program *Saxon Publisher* supports AEPS of course, but *Professional Page* and *PageSetter II* refuse to load them, and *PageStream* has a good try but then (surprise, surprise) crashes.



***SaxonScript Professional* handles all the standard PostScript special features, including the rotation of pages**

COLOURFUL ADD-ONS

The last file name extension has to do with colour. Actually it's four extensions in one, 'psc:cmyk', which informs *SaxonScript* to produce the separations for the four primary ink colours of Cyan, Magenta, Yellow and blacK, in the order specified. (The capital letters are those letters used to symbolise these colours in publishing circles). You don't need to specify all four colours, for instance you could produce just the black separation by using 'psc:k'.

Now here comes the really sexy bit. If you select the Colour output option in Workbench printer preferences and create a colour PostScript file from your DTP program, the file name 'psc:cmyk' will create an on-screen colour composite – in other words it will overlay all four separations (in the order specified) so you get a representation on-screen of what the actual colour output will look like. If you've got a colour printer, you can print it out as well (or instead) if you like.

Two things you have to keep in mind are that the order in which the primary colours are specified in the file name extension must be the same as the order in which the DTP software saves them – *PageStream* and *Saxon Publisher* do CMYK, *Professional Page* does KYMC.

The other point is that the representation you see on screen will be at the printer resolution specified in Workbench printer preferences, 300 or 360 dpi on Density 7 for example, so what you see isn't exactly what you get. This is because your separations on the imagesetter will be at least 1,270 dpi; but the representation is plenty good enough to get an idea of the final output, particularly if you stand back a bit and squint at the screen.

Ah yes, one more thing – monochrome inkjet printers owners can of course use *SaxonScript*'s colour separation facilities to produce colour composites by doing four passes and changing the ink cartridges. And yes, it *does* work with *Professional Page*.

One more thing I ought to mention is that the on-screen colour composite may not be what you expect to see. It won't be covered in solid colours, like a picture created with *Deluxe Paint* for instance, it will be composed of little splashes of the four colours which form patterns called 'rosettes' – when you see them you'll understand just how they got their name.

These rosettes are formed because the coloured dots in each separation are rotated to a different angle to avoid the curse of colour publishing, 'moire patterns'. The *SaxonScript* manual goes into some depth about colour theory, and a MoireTest program is supplied to enable you to experiment with different angles at different resolutions. Your DTP software will normally default to a set of angles that work well, so you needn't worry too much about it, but the facilities are here if you want to start to learn about colour without having to spend a fortune on getting things printed.

RED LETTER DAY

SaxonScript comes with a standard set of typefaces which match those found in most PostScript printers.

There are 31 of them all told, four short of the 'classic 35' – the missing ones are the four HelveticaNarrow faces (Roman, Bold, Italic, BoldItalic) and this is probably because some PostScript printers have HelveticaNarrow, others have HelveticaCondensed, others have only Helvetica; they may sound similar, but they are all quite different. Perhaps Saxon Industries ought to consider including these extra Helvetica typefaces for completeness.

Professional Page users will be able to use the Amiga bitmap fonts supplied with that package, which use much less memory than the Compugraphic fonts and render on to the screen more quickly, and when printed to the PSC: device SaxonScript's *PostScript* equivalents will be used.

In fact, for *Professional Page* users SaxonScript is a real alternative to the Outline Fonts Pack which provides the 'classic 35' PostScript typefaces in Compugraphic format – Amiga bitmap versions of all 35 are supplied with *Professional Page* and *SaxonScript* knows about them all except HelveticaNarrow.

FONTS AND FACES

If 31 faces isn't enough for you (of course it isn't!) then you needn't despair, *SaxonScript* is supplied with a utility which can convert any PostScript font into various other formats. And I mean *any* PostScript font – Type 1 and Type 3, plus it will 'rip' downloaded fonts from pure PostScript files.

The GetFont utility will convert to PC Type 1 ('.PFM' files), pure PostScript Type 1 ('.psfont' files), *SaxonScript*'s own format, or Amiga bitmapped format.

There are thousands of public domain and shareware Type 1 and Type 3 PostScript fonts out there, mainly on PC disks, but with a file transfer utility such as *CrossDos* or the shareware *MultiDOS*, transporting these on to Amiga disks won't be a problem, after which they will be available for use and/or conversion by *SaxonScript*.

The fly in the ointment here is the Amiga bitmap conversion, which doesn't create the '.metric' file that *Professional Page* requires in order to be able to use it. *Professional Page* used to come with a freeware utility called *PPage_Any_Font* that created these '.metric' files, but the program didn't work entirely properly and doesn't appear to be included in the 3.0 release.

However, there are other freeware utilities available to make bitmap fonts and the associated '.metric' files from PostScript fonts, any public domain library should be able to help you – the best is probably Adrian Aylward's *MkBmap* on Fish 489, which requires 'post.library' from Fish 518 and *Conman* from Fish 426 I believe.

LOWERING THE TONE

Probably the best feature of *SaxonScript* is what it does with graphics.

I mentioned right at the start of this article that PostScript reproduces greyscales using a method called 'halftoning'. However there's a problem with halftoning inasmuch that it usually looks poor on low resolution printers because the halftone patterns are very noticeable. You get a kind of banded or blotchy effect.

Conversely, the other method of rendering greyscales, 'dithering', looks awful on high resolution printers because the patterns tend to blur together and consequently produce inconsistent levels of grey.

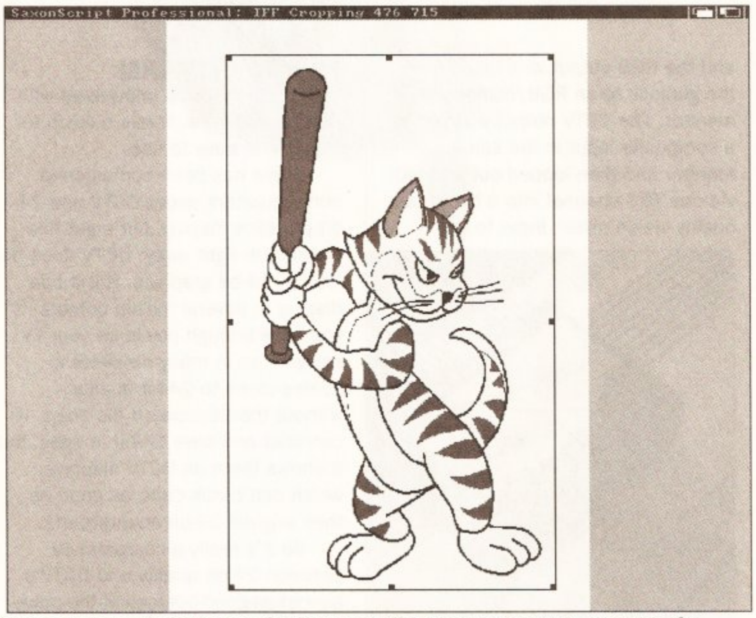
To solve this dilemma *SaxonScript* switches gradually from dithering to halftoning as the resolution of the output device increases. Comparing a graphic output on the same 300 dpi laser printer by normal PostScript and then *SaxonScript*, there's no doubt that the *SaxonScript* version is a sharper and more detailed image.

Now, as we're talking PostScript and halftoning here, this might be a good opportunity to explain the term 'screen frequency', also known as 'screen density'. In *Professional Page* it is referred to as 'Density' in the PostScript Output requester with a default value of 60 lpi (lines per inch), in *PageStream* you'll find it in the Edit Coordinates requester as Screen Frequency.

The word 'screen' doesn't mean the display on the monitor, it refers

to the fine mesh-like apparatus that is used in traditional printing to convert a photograph into a printable object that consists strictly of black dots only, no greys. Like almost everything else the term has been carried over to desktop publishing. The 'lines per inch' figure is very similar to the 'dots per inch' value that we waffle on about when talking printer resolution, except that its job is to tell PostScript what size the halftone cells should be – in effect it means 'halftone cells per inch'.

PostScript creates these halftone cells by dividing the available output resolution up into a sequence of equally sized pixel clusters; each cluster is a halftone cell. For example, let's say your output resolution is 300 dpi and you specify a screen frequency of 75 lpi – since we need 75 halftone cells per inch (the lpi) and since there are 300 output pixels per inch (the dpi), each halftone cell will be four pixels wide (4 times 75 equals 300). And because PostScript halftone cells are square it will also be four pixels high.



Some of *SaxonScript*'s special features allow you to convert any part of a PostScript page into IFF, DR2D, EPS or AEPS format

So we have a halftone cell of 4 by 4 pixels, 16 of them in all. In this cell it is possible to represent 17 shades of grey from 0% (no black pixels) to 100% (16 black pixels).

Another example. A screen frequency of 60 lpi means that at 300 dpi output resolution each halftone cell will be 5 by 5 pixels (because 5 times 60 equals 300), so it is possible to represent up to 26 levels of grey, including black and white – 5 times 5 equals 25, plus white equals 26. So by lowering the screen frequency figure we have gained more grey levels, but the size of the halftone cells has increased so the output will appear coarser.

The same screen frequency on a 360 dpi printer creates halftone cells that are 6 by 6 pixels (6 times 6 equals 360), each of which can represent up to 37 levels of grey – more greys than a 300 dpi printer at the same level of coarseness.

One last example. A screen frequency of 127 lpi when output at 1,270 dpi on an imagesetter means that each halftone cell will be 10 by 10 pixels, making it possible to represent 101 levels of grey.

At 300 and 360 dpi the best compromise between the number of greys and coarseness is 60 lpi. Remember that if you go above 75 lpi on a 300 dpi printer you won't be able to represent the 16 shades of grey in Amiga greyscale pictures, on a 360 dpi printer the highest sensible screen frequency is 90 lpi.

This 'feature' of PostScript halftone cells, and the fact that they have to square, is why *SaxonScript* reverts to dithering when the output resolution drops below a certain level, otherwise you'd have to put up with a handful of grey levels and very 'banded' looking output.

PROBLEMS, PROBLEMS...

SaxonScript is such a good, solid program that I can almost forgive the few problems I came across. Almost.

Usually with a program of this magnitude the main problem is that you need stacks of memory, but thanks to *SaxonScript*'s virtual memory feature this isn't a consideration, 1Mb is plenty provided you have a hard drive waiting in the wings. The main problem is speed – a complex A4 page of 300 dpi PostScript can take more than half an hour to interpret, and that's on an Amiga 3000 with its 68030 CPU; on a standard Amiga 500, with 68000 CPU and a fairly fast hard drive, we're looking at maybe two or three hours per page.

Naturally I'm looking at a 'worst case' here, simple pages of 300 dpi text aren't so bad, taking five minutes or so on an Amiga 3000, 20-30 minutes on a standard A500.

I'm sure *SaxonScript* is doing the best it can, and increasing its speed would probably mean sacrificing quality, but the question has to be asked whether someone who intended to use *SaxonScript* 'industrially' to proof pages on a regular or frequent basis could afford to wait; all those half-hours add up, and time is money.

Of course this is only version 1.0, subsequent versions may very well be faster. I should point out that you can get much faster results by selecting a lower graphics output density; and provided you have the memory you can multitask and get on with something else while *SaxonScript* is working.

SIZING UP

The other big problem is with page sizes. *SaxonScript* takes its output resolution, page width and page height from Workbench's printer preferences. It loves the standard US page lengths of Legal (14in) and Letter (11in), and it recognises the Narrow and Wide Tractor settings. But ask it to give you A4 sized pages and it does what a lot of North American software does, screws up – it appears to trim the page back to 11in by cutting off about 3/8ths of an inch from the the top of the page and the same from the bottom of the page.

I tried till I was blue in the face to get full length A4 output, but it won't have it unless I select Legal length paper (14in), after which I ended up with more than 2in of white space at the top of the page because PostScript renders from the bottom of the page up.

With *Professional Page* it is possible to specify a -14.0 pica Y offset in the PostScript Output Specs requester (accessed via the Alter Current Page requester) to move the A4 page up to the top of the Legal page, but then there's the page *width* problem. Here again, *SaxonScript* doesn't appear to enjoy anything but 8in wide paper, cropping a quarter of an inch off the left-hand side and a quarter of an inch off the right-hand side of an 8.5in wide page, leaving you with an 8in printable area in the middle.

These forced 'margins' are frustrating and mean that bleeding A4 pages cannot be proofed properly. (No, I'm not cursing, I mean A4 pages that have elements on them that 'bleed' off the edges.) I'm sure it'll be blamed on either Workbench printer preferences or unchangeable settings within particular printer drivers, but I don't really care whose fault it is, I'd much rather it didn't happen.

Still, 8in by 11in isn't so hard to live with, especially since by a complete fluke it just happens to be the exact size of page I work with all day long, and I'm sure (!!!) Saxon Industries will fix this page sizes problem before very long, hopefully by ignoring Workbench printer preferences completely (they are a right pain in the bum at times!) and having its own preferences program for output resolution and page sizes settings. AS

SHOPPING LIST

SaxonScript Professional £99.95
by Saxon Industries
14 Rockcress Gardens
Nepean, Ontario
Canada K2G-5A8
☎ 0101 613 228 8043

Distributed in UK by:
Surface UK Ltd,
5 Rockware Avenue,
Greenford, Middlesex
UB6 0AA
☎ 081 566 6677

CHECKOUT SAXONSCRIPT PRO

Ease of Use ●●●●●
Simply direct your PostScript output to *SaxonScript*'s PSC: device, using facilities either in the application that is printing or by using the Copy command after saving the Postscript output to a disk file.

Features ●●●○○
Hard to imagine what more could be implemented, although there is room for improvement and I guess the file format conversion utilities could be extended

Speed ●●○○○
It's not quick – a complex A4 page can take an hour or more to render – but then it's doing a highly complex, memory and processor intensive job, so it can be forgiven. Simple pages of text take 30 minutes or less.

Documentation ●●●●●
The 100-page manual is an excellent read; more than half of it is concerned with educating you about PostScript and how *SaxonScript* works.

Price Value ●●●●○
Compared to the cost of a PostScript printer, the cost of *SaxonScript Professional* is negligible. (Am I allowed to tell you that a similar PostScript interpreter for the Macintosh costs £800?)

Overall rating ●●●○○
I'd really like to give it four blobs, but until the problem with page sizes is ironed out it'll have to put up with three.

Video Veneers

Gary Whiteley puts DCTV under scrutiny, test runs the budget titler Videalab and gives the latest on AVideo 24 – three new products to add gloss to your video ventures

There's a wealth of equipment out there to soup up your video productions. This time we'll be focusing on three such products – DCTV, Videolab and AVideo 24 – to find out how these can add the finishing touches to your work.

First, DCTV – I thought it would be worth giving you an idea of how it works in a video environment, what use it might be to video buffs, and what I liked and disliked about it.

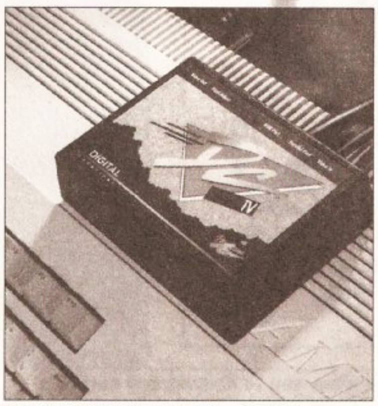
Since I've recently been ensconced in a well-equipped edit suite, I've had ample opportunity to have a go with many aspects of DCTV – from painting and animation to frame grabbing – and to test the video output into the bargain.

But first... here's how the Amiga and video system were wired up.

The DCTV was connected to the Amiga in the normal way, via its RGB connector. The 8806 genlock was connected to the pass through of the DCTV connector (where an Amiga RGB monitor cable might usually be) and the RGB output was taken from the genlock to an RGB/composite monitor. The DCTV output was fed to a composite input in the same monitor and then looped out and fed via one TBC channel into a broadcast quality vision mixer. Input to the DCTV was via composite video (the only way in) with a choice of a framestore or camera as source.



The keyboard and book are part of an image digitised with a black and white video camera. The rest of the picture was cut away, a quick background made in the spare screen using fill and brush tools and then the digitised remnants added as a clip. A final touch of smoothing and some colour tinting completes the image



The DCTV device itself – easily fitted to the RGB connector

The genlock was synchronised to the sync pulse generator (SPG), so the Amiga was locked up with all the other video equipment and the video output from the 8806 could be injected into the vision mixer without the need for time base correction.

This leads me to my first point. It appears that DCTV disregards the timing pulses from the Amiga, since it is impossible to use the DCTV video output as a direct source for a vision mixer, even though the Amiga is synched to the SPG. The video signal must first be time base corrected to bring it into sync, so if you plan to use DCTV in a multi-source production, bear this in mind. Recording direct to tape will present no problem, but don't forget that you'll lose a generation in quality if you wish to subsequently edit the DCTV material into your programmes. Enough talk of connections. On with the show.

HOT SOFTWARE!

On the whole I was impressed with DCTV's software. It was a cinch to install and easy to use.

There has been confusion in some quarters about DCTV and 24-bit graphics display. Let's get this cleared up right away: DCTV does *not* display 24-bit graphics. But it can display in several million colours (if you have enough pixels on your TV screen), so in many respects it comes close to 24-bit quality – without the associated file sizes. It can load and save 24-bit images, but it shows them as DCTV displays, which don't look quite as good as their original 24-bit counterparts.

So it's really a compromise between 24-bit quality and DCTV's almost-as-good-but-look-at-the-price-and-the-features output. Many users will be satisfied with DCTV's picture quality, despite what appears to be a softer and slightly smearier composite output than I expected.

ANIMATE IT

DCTV's ability to play back animations is interesting – it's unique, though new devices such as AVideo24 are closing fast. The problem is that if you require full-screen DCTV animation (ie a 16 colour hires overscan equivalent), you'll require an accelerator card, as the Amiga cannot shift data quickly enough even under normal conditions to play such animations at anything like the normal PAL speed of 25 frames per second. But if you restrict your animations to smaller screen areas, the results can be impressive, as DCTV's demo shows.

Otherwise, the next step is to record 24-bit images frame by frame on to video tape, an expensive proposition requiring the services of a VCR capable of single frame recording and a single frame controller to control the editing.

If you don't mind DCTV

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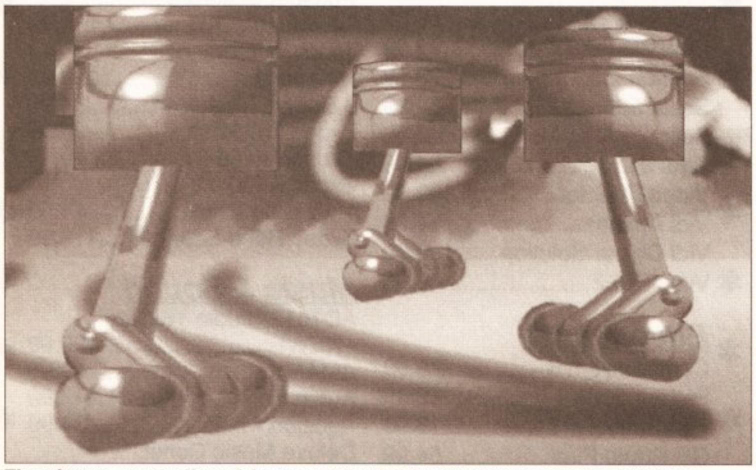
WHATEVER HAPPENED TO HAM-E?

Some of you may have noticed that it's become very difficult (if not impossible) to buy Black Belt's HAM-E display device any more. The reason is that it is no longer being produced. Black Belt will actually make no comment as to why, except that it is restricted by a Non-Disclosure Agreement with Commodore. Could this mean that an internal version of the HAM-E will become available for (or be fitted to) any new Amigas which emerge in the future? It's an interesting thought...

There have also been reports of Image Professional being made available as stand-alone software, but these remain to be confirmed.



One of the demo images supplied with the DCTV software. Your guess is as good as mine to how this picture was originally produced, though I suspect that 3D modelling was involved



The pistons were clipped from an *Imagine* 24-bit image I made, and then pasted over a very quickly drawn airbrush and fill blended background

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animations playing back at less than 25 frames per second, you could utilise the services of *ADAM* – the Automated DCTV Animation Maker, a CanDo program which waits for 24-bit frames to be rendered by programs such as *Imagine* or *Real 3D*. *ADAM* converts the frames as they are produced and builds an ANIM file, producing an animation which can be played back via DCTV.

DIGITISE IT

Turning from moving pictures to stills, how does DCTV's image grabber fare? Having tried various sources for input, I've come to the conclusion that while it's easy to grab an image from any freeze-frame or still-capable video source, the quality of the grab doesn't seem dependent on the input's quality. Perhaps there is no point in passing high-quality images framestored from videotape to DCTV and expecting them to remain high-quality, as the process of grabbing in colour from composite video degrades the image. But as a tool for turning video images into artwork, or for compositing into DTP programs, then DCTV fares at least as well as any. I don't think we should expect perfection from a composite device.

The number of picture processing options means that a grabbed image can be enhanced by sharpening, colour tweaking and adjusting contrast and brightness settings, though all of these affect the entire screen area. Different combinations can be assessed without affecting the original grab, and the changes need only be committed when acceptable, as DCTV keeps the original image in a buffer, until replaced with a new version.

I found some problems getting the colours of a video image correct – especially in the reds and oranges. Like all digitisers, DCTV will work well under some circumstances and not so well under others. But as part of DCTV, it provides reasonable quality.

PAINT IT

The Paint segment of DCTV is my favourite – for its variety of tools, features and versatility. There's not much lacking from *DCTV Paint*. OK, there are no animation functions, but what you do get is impressive. Loads of colours and options. Smoothing, water-colouring effects, soft edges, rub-through to the spare page (if you've enough memory), lots of fill styles (including spiral gradient fill), stencils, shadowing, tinting etc.

It is fun to use as well, especially if you can grab in from video and cut, paste and colour to produce an image to call your own (don't forget about copyright restrictions). After many hours of exploring *DCTV Paint* I was still finding new (and better) ways of constructing images. Great! Especially being able to load a 24-bit file, see it in something approximating to 24-bit output and use it as the basis for something new. There are some omissions, like snapping to grid and anti-aliased text, but these could be surely be integrated into any software upgrades.

CONVERT IT

A close cousin of Digitise, and having many of its processing tools, Convert can only "reduce" the quality of an image (compared to DCTV or 24-bit formats), as it converts and saves into the more usual IFF ILBM formats such as HAM, Interlace etc. But it does at least as good a job of conversion as any other similar program I have seen and will prove invaluable to those who need normal IFF formats to use in DTP or other graphics or animation uses.

REGRETS, I'VE HAD A FEW

For me, DCTV's major fault is that its composite video output is not quite up to scratch. There was always a softness which I (and other observers) found at least slightly objectionable. I've heard that work is being done to produce both RGB and Y/C output versions – so perhaps we can look forward to higher quality!

At present there are some problems with the video output – the output was *way* out of spec as regards chroma position and amplitude.

But it's not all doom and gloom. One of DCTV's outstanding attributes is that while it can display in many more colours than normal IFF, the files sizes for DCTV format images are considerably smaller than would be produced by 24-bit files. This gives the advantage of being able to play back animations from reasonably compact data files. Take a look at the Space Savers box to compare for yourself.

Gary Whiteley can be contacted as drgaz @CIX.compulink.co.uk.

SPACE SAVERS...

Here's a comparison of the file sizes produced by one single file when converted to various different formats.

Format	Size	Bytes
IFF24	36 x 566	846490
DCTV.RAW	736 x 566	373664
DCTV.display	736 x 566	148644
16 col Hires	736 x 566	132020
JPEG	736 x 566	47358

NB – JPEG files cannot be displayed directly – they are compressed and must be unpacked to another format first. DCTV.RAW and DCTV.display files are both formats peculiar to the DCTV system. RAW format allows multiple saving and loading with no quality loss, while the .display format is Digital Creation's proprietary format which the Amiga interprets as 16 colour hi-res IFF images, but which actually have extra information embedded in the top and left hand edges which tells the DCTV hardware that it is a DCTV image. Where a normal 16 colour image has pixel information, DCTV.display images have encoded video waveforms.

SHOPPING LIST

DCTV.................................... £479
by Digital Creations

Available in the UK from:
Silica Systems Ltd
1-4 The Mews
Hatherley Road
Sidcup, Kent DA14 4DX
☎ 081 309 1111

CHECKOUT DCTV

Output Quality ●●●○○
Not particularly outstanding video output.

Software ●●●●○
Outstanding, just a few omissions.

Documentation ●●●●○
Excellent, and readable!

Price Value ●●●○○
For me, a little overpriced because of the output quality.

Overall rating ●●●●○

Even with the output problems I still have to give DCTV a high rating because of all the other great things it does. Try to see it for yourself, and let your eyes decide if DCTV is the video display device you need.

VideoLab

Gary Whiteley dons his white coat and gets down to the VideoLab to research a titler which survives the test

Normally, I don't stand for any nonsense from programs purporting to be 'professional' which turn out to be far from it. If they don't cut the mustard, I feel I ought to tell you. But there'll be none of that in this case, for here's a titler with a difference... ***VideoLab.***

it comes straight out and admits that it was designed for the majority of Amiga/video users – those who don't expect to make a penny from video work, but enjoy it all the same. And there's a second surprise in store – *VideoLab* was written with AMOS and is licenseware, ie it won't cost you an arm and a leg.

LOWEST ENTRY LEVEL

Rather than needing great wodges of memory, *VideoLab* will run happily with only 512K (which means that the only Amiga it *won't* run on is an original, unexpanded A1000), but 1Mb is recommended. It also requires only one disk drive, though I had no problems running it from either floppy *or* hard disk. So this is truly a program for the common man.

Let's move on to the features and see what makes *VideoLab* tick and what you get for your paltry £3.50. (Oh, that the BBC licence fee was so cheap... sigh).

ROLL, CRAWL AND ZIP LTD

There are several text display functions – vertical and horizontal scrolling (known professionally as Roll and Crawl), Fade (on and off), Print (aka Teletype or Zip) and Snap (also known as Bang). A pretty good start for an amateur program!

Then there's the loading of 8 colour IFF files as backgrounds, and a pseudo-genlock effect which uses Colour 0 (more on this later), plus the fact that any standard Amiga bitmap font can be used for text display – though only one can be in use at any one time. There's a choice of four colours, shadowing, left, right and centre justify, single, double or one and a half line spacing, an IFF viewer, a simple test pattern generator, a basic text editor, the ability to import and export text files to and from word processors, a speed selection from slow, medium, fast and turbo, on-screen palette adjustment, tab settings and even multitasking... (gasp!)

WHERE'S THE CATCH?

Well, *VideoLab* only works in lo-res, so it can look a bit chunky. But let's have no apologies here, we're talking low cost, not low quality. Beware though, you hardened hi-res users. If you slip up and try to load a hi-res pic as a background you will be booted out of the program with a "Can't Open Dual Playfield" error message to the effect that *VideoLab* can't handle such big pics .

Now, if all you need is lo-res, *VideoLab* may be right up your street. It's easy to use and adjust, and doesn't get in your way too much (unlike some 'professional' programs I have tried). All action is carried out through the mouse – except for text entry – and is very straightforward. But there's a down side to this mousiness, and I found myself yearning for a few keyboard short cuts. I'm quite happy using the mouse, but cursor keys would be handy for scrolling through the font lists, for example, instead of having to click repeatedly on *VideoLab*'s Up and Down gadgets.

AND CUE CREDITS...

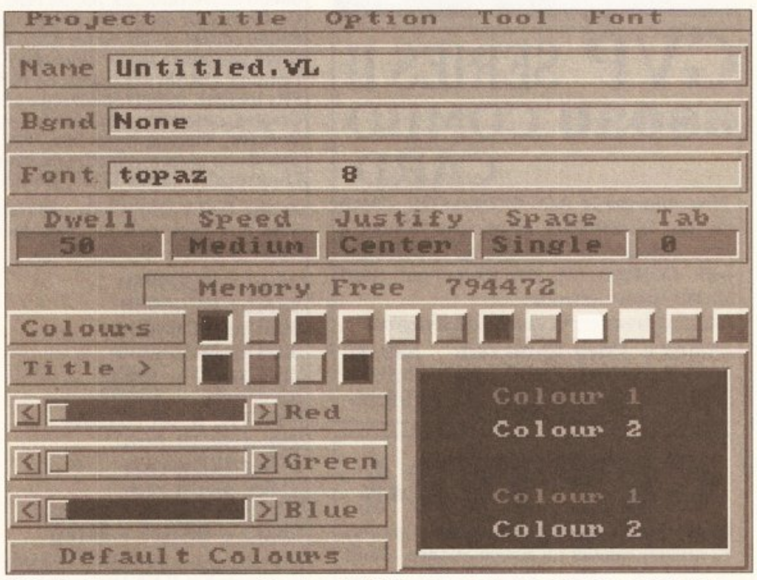
Perhaps you're wondering what *VideoLab* is like to use. Well, it's this simple. Use a text editor, or the built-in basic text editor, and set up your words. Leaving a blank line between text moves the subsequent text on to the next page, whereas a single space on a line just puts a line space between text lines. Select a font from your favourite font set (customise a copy of the program disk or use one of the provided fonts), select text colours, style and whether or not the text will be shadowed. I'm afraid all of the above choices only work globally on the text, on a what-you-set-is-what-you-get basis, but this is the price you don't pay for features you didn't want in the first place, since I already told you this isn't pro-software! Set a speed, and a spacing, and then select a display style. Wait for the screen to load, click the left mouse button and the text appears. It then runs to its conclusion or loops indefinitely if *VideoLab* was so instructed. A click of the right button puts you back in the program window.

That's it, in a nutshell. But hang

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How *VideoLab* looks in Back To Front action – text appears inside the background frame, but only where it is superimposed over colour 0



***VideoLab*'s menu screen – the heart of this low cost, practical solution for the video enthusiast who isn't interested in 'professional' quality but still wants to add the occasional touch of magic to his videos**

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on – there's one nice feature of *VideoLab* which I haven't mentioned, though it may take a little describing. Imagine, if you will, a picture frame on the screen, forming a border all around a plain central area. Imagine also that this area is filled with Colour 0 (the 'background' colour). In genlock terms this colour would be the one through which the video image would be keyed. In *VideoLab* it is used for displaying text.

By toggling the Back to Front command, text will be displayed only where it is in front of Colour 0. As only the centre of the framed image is this colour, text will only be displayed over the middle of the screen. If scrolling text is used it will seem to appear from behind the frame, run up the screen and disappear under the frame again.

AND TO WRAP...

The disk-based documentation, well written and useful by the way, states that *VideoLab* wasn't written to work with S-VHS or genlocks although, I found the program worked fine with a Rendale 8806 genlock connected to an Amiga 2000. But I wouldn't like to comment further than if it works with your genlock, fine, if it doesn't, you have been warned...

I would have no hesitation in recommending *VideoLab* to anyone wanting a budget titler, as long as they were aware of the program's limitations. That said, I commend S Lennox-Gordon for his efforts.

By the way, if you are mystified by my enthusiasm, when you've read some of my scathing reports on other titlers, the reason is simple. *VideoLab* doesn't pretend to be anything that it isn't. AS

SHOPPING LIST

VideoLab **£3.50**
plus 50p postage and packing
by S Lennox Gordon
AMOS Licenseware

Distributed in UK by:
Deja Vu Software
25 Park Road, Wigan,
Lancs WN6 7AA
☎ 0942 495261

CHECKOUT VIDEOLAB

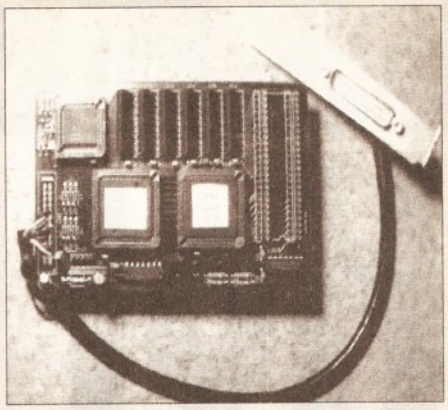
As this isn't a full price piece of software I'll forgo my usual responsibilities on the scoring side, except for this:.

Overall rating ●●●●○

Keep up the good work.

<<REWIND<<

AVIDEO 24



What with the review of VideoLab, and this review of *AVideo 24*, I'll forgive you for having a touch of déja vu. Although you might think you'd read this before, let me assure you that this is not the case. Or is it?

In *Amiga Shopper 13* I reviewed both the AVideo 12 and AVideo 24 cards, though I mentioned that I was obliged to base my information on only the AVideo 12 model, which was all that was available at the time. I've now been able to take a close look at the AVideo 24 card, play with *TVPaint 1.6*, and generally have a good time displaying and disfiguring 24-bit pics.

WHAT'S AVIDEO24?

But first, a brief recap... AVideo 24 is a new 24-bit display card from French company Archos. It plugs into the Denise socket of *any* Amiga (except the A1000) and outputs in RGB to your regular RGB monitor. It comes supplied with *TVPaint 1.6* (which is almost identical to the rather expensive version for the Harlequin card) and some nifty utilities like *Opera*, a presentation-type program.

In operation it works identically to the AVideo 12, using framebuffers built on to the card to provide 24-bit display, while still allowing Amiga graphics to be displayed in the foreground.

The main attraction is *TVPaint 1.6*, a full-featured 24-bit paint program which has been adapted to perform on the AVideo 24. There are some constraints, however, which you should be aware of.

LOADSA MEMORY

TVPaint 1.6 requires an 030 card, plus a fair amount of memory (I would say at least 6Mb, though 8Mb+ is recommended), and it needs Kickstart 2 – which isn't mentioned in the documentation!

Display size is 768 x 560 PAL overscan, and the following formats are supported: ILBM, ILBM-12, DEEP (Amiga Centre Scotland format), Targa, Rendition (Caligari file format), JPEG and DELTA.

For those new to 24-bit operations the novelty of this level of creativity before your very eyes (rather than the more usual composite screen to one side of your Amiga) may fool you into thinking that you are making 16 million colour masterpieces as you draw. Not quite...

Whilst AVideo's *TVPaint 1.6* is similar to its costlier siblings it paints in 12-bit (ie 4096 colours) and has to be toggled to display in 24-bit. Not too much of a problem when weighed against cost considerations, though purists may find cause for complaint.

SMALL IS BEAUTIFUL

As well as all the regular features you'd expect of high-class paint software, there is one which will particularly benefit those who don't have the luxury of a large scale storage device (by which I mean tape streamers or mega-sized hard drives). I'm talking JPEG here – and TVPaint's ability to load and save in this picture compression format – which means immense space saving (typically anything up to 80% of the file size) with imperceptible quality loss after uncrunching.

TVPaint can load and save in other formats, including IFF24, but the files can often be over a megabyte in size, so JPEG can offer considerable advantages.

Beware, however, *TVPaint* cannot accurately compress consecutive frames of moving pictures (such as animation) without causing some inaccuracies on decompression, simply because it works only on discrete images and cannot make comparisons between frames, whihc is why MPEG format (for moving pictures) is being developed to address this very problem.

I'm sorry there hasn't been room to tell you more, but if you ask me what I think of it I'll say that I like it, and I want one!

There are currently space conflicts between CSA MegaMidgetRacer cards and AVideo 24s – Checkmate is solving this by making an adaptor card which should be available by the time you read this.

GENLOCKING AVIDEO

Although Checkmate has not had a chance to test *every* genlock, it is confident that AVideo boards will work with most genlocks, though a special lead may be required. The AVideo 24 has been tested with G2, RocGen, Rendale and Electronic Design genlocks with no problems.

SHOPPING LIST

AVideo 24 .... **£599**
by Archos

Distributed in UK by:
Checkmate Digital Ltd
80 Mildmay Park
LONDON N1 4PR

CHECKOUT AVIDEO 24

Ease of Use ●●●○○
More helpful manuals would improve this.

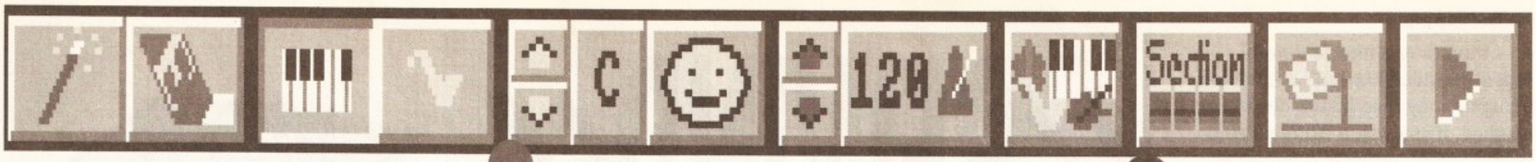
Features ●●●○○
Many, some more useful than others.

Documentation ●●●○○
Generally scant, with adequate (if dated) manual for *TVPaint*.

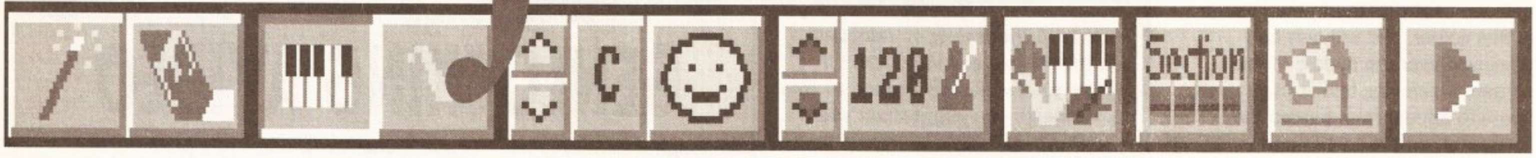
Usefulness ●●●●●
With *TVPaint* included AVideo 24 is a low-cost 24-bit graphics solution.

Overall rating ●●●●○

Apart from the installation factor, AVideo 24 should prove to be a worthy contender in the budget 24-bit stakes.



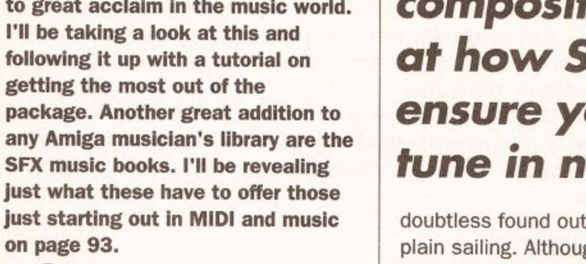
Hot jammin'



This month our music pages take a different slant – beginning with Paul Overaa's tutorial on SuperJAM, a stunning new music composition package. Plus: a look at how SFX music books will ensure you're bashing out a good tune in next to no time...

This month in the MIDI column, we're going off on a slightly different trail with reviews of some products which shold make life easier for the budding musician. One of the latest packages for the Amiga musician is *SuperJAM* which has been released to great acclaim in the music world. I'll be taking a look at this and following it up with a tutorial on getting the most out of the package. Another great addition to any Amiga musician's library are the SFX music books. I'll be revealing just what these have to offer those just starting out in MIDI and music on page 93.

From a musician's viewpoint I feel a bit like a traitor dealing with a program which lets you create music by 'cheating'. A MIDI sequencer, by offering multi-track recording and sophisticated editing, can make it possible for the would-be musician to build reasonable song arrangements fairly easily. Despite the advantages that the sequencer offers, a user still needs to be able to work out and play melodies, chords, bass line and drum parts and, as many of you have doubtless found out, it is not always plain sailing. Although working out single finger melodies on a keyboard is usually easy enough, finding suitable chords or creating drum patterns are just two of the areas where things can get tricky for the newcomer.



***SuperJAM*'s startup display**

SUPERJAM SOLUTIONS

One possible solution, which until very recently had not been available to Amiga users, is to use a computer program to do even more of the work.

Things have recently changed in this respect because Blue Ribbon Soundworks has released *SuperJAM*, a program designed to automate most of the work involved with creating song arrangements. In short *SuperJAM*, given a small amount of guidance, will create complete musical arrangements for up to six different instruments (including bass, drums and keyboards).

SuperJAM is usable by both MIDI and non-MIDI oriented musicians alike. It is also reasonably priced, and best of all it will run on everything from a 1Mb A500 machine upwards.

It must be said at the outset that there are certain limitations to *SuperJAM*, especially for non-MIDI users, and there are also a number of bugs lurking around in the current release. None of this however prevents *SuperJAM* from being used effectively and I for one have already achieved excellent results with the package using a standard 1Mb machine.

FROM PAPER TO EAR

The main reason that I have chosen to look at *SuperJAM* is not because of its undoubted power... it is because of the fact that *SuperJAM* is a program which can be used to good effect by both musicians and would-be musicians ranging across *all* abilities.

Rather than providing a conventional review I want to illustrate one of the more important aspects of the program's use, namely how *SuperJAM* can be used to create fully fledged song arrangements directly from sheet music without you having to play anything at all!

A WHIRLWIND TOUR

Since *SuperJAM* is a very new program, some kind of tour of the package is clearly needed. To set the scene I'll start with a few words about the program's internal sound arrangements...

For internal sounds *SuperJAM* uses 'TurboSound technology' which is based on the mixing of sound samples before playing them. A core set of ready-made instrument samples are provided as part of the package and TurboSound editing facilities have been included as part and parcel of *SuperJAM* (they include sample tuning, special effects, IFF<->TurboSound sample conversion and so on).

There are, however, two snags to the use of internal sounds: first, the TurboSound approach needs to use separate samples for different notes within an the octave so memory can be eaten up very quickly. Second, TurboSound facilities are processor intensive and with a non-accelerated Amiga you will get rather poor quality audio when composing in real-time. There are some tricks and tips provided in the *SuperJAM* manual for getting around such snags but there's no doubt that the best *SuperJAM* results are obtained with

> **"SuperJAM's music styles are composed of a series of stored patterns which determine the riffs, fills, variations and breaks..."**

MIDI equipment because *SuperJAM* is then relieved of the task of sound sample processing.

SuperJAM can be used to create real time accompaniment in a number of ways. You can click on the notes of the on-screen piano keyboard, use the Amiga's own keyboard, or have *SuperJAM* track the root notes from the low end of a MIDI keyboard.

When used in this real-time 'jamming' mode *SuperJAM* will use the data you provide, in conjunction with the chosen style, to generate some suitable backing.

SuperJAM's music styles are composed of a series of stored patterns which define the riffs, fills, variations and breaks for each of the SuperJAM band players. Over thirty different styles ranging from country and pop/rock to classical and jazz compositions are provided and it is also possible to create new styles although this is a more advanced area that few Amiga musicians will yet have had time to experiment with. Of more interest to most users will be the way in which songs can be generated from a simple chord sketch. I think at this stage we need to move to a specific example to properly explain exactly what SuperJAM can do...

The chord sequence used to recreate Bob Dylan's 'I'll be your baby tonight' – easy, when you know how...

G / / /	/ / / /	/ / / /	/ / / /
A7 / / /	/ / / /	/ / / /	/ / / /
C / / /	/ / / /	D7 / / /	/ / / /
G / / /	/ / / /	D7 / / /	/ / / /

THE TUTORIAL PROPER

For the purposes of this tutorial I chose to use *SuperJAM* to create a complete arrangement of the Bob Dylan song "I'll be your baby tonight" using the sheet music as a guide. Structurally this, like many popular tunes, is an easy piece to play. Essentially, it consists of just an intro, some repeated verse and choruses and an end section. Music Sales kindly gave permission to reprint eight bars of the first verse as an example of their SFX books (reviewed elsewhere in this issue) and by comparing the steps mentioned in this tutorial with my chord sketches and the original sheet music fragment you'll be able to see just how easy the overall sheet music <-> final *SuperJAM* arrangement conversion process is.

I ought to point out that the mechanics of creating a *SuperJAM* song arrangement is essentially the same whether you are using MIDI or not, although the MIDI user does initially have a bit more setting up to do.

Each *SuperJAM* instrument can be individually set for either internal sound or MIDI use and once MIDI output for a particular instrument has been selected the basic assignments for channel number and patch number (program change command) need to be made. This simply involves clicking on the appropriate channel or patch gadget and selecting a suitable value.

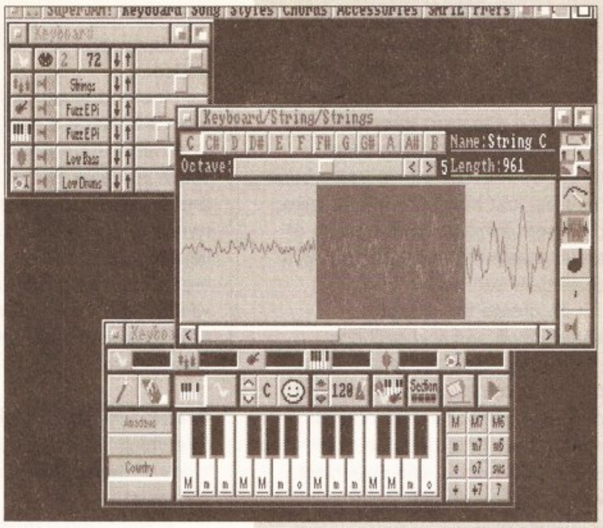
Most MIDI users will also need to edit the default drum map because *SuperJAM* comes set up for a Roland MT-32 drum-note assignment scheme.

SuperJAM works much the same way as a real musician would in that songs can be created by linking named sections of music together. The first step in creating an arrangement then is to decide on how you wish to split up the song. For popular music that usually means identifying the verses and choruses which are present and perhaps deciding roughly on an appropriate overall pattern. You might for instance decide on this type of format...

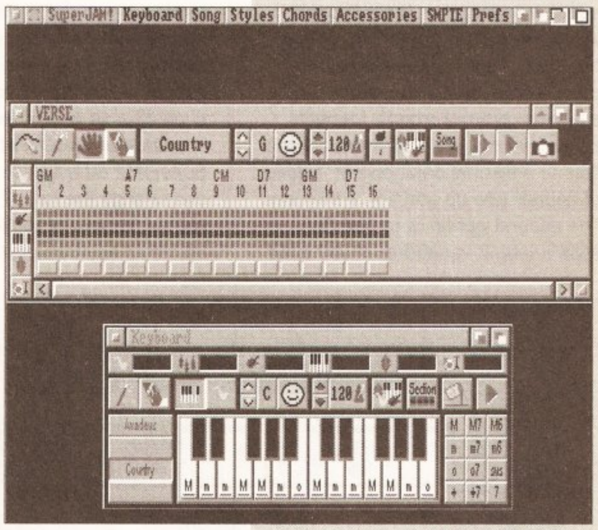
Intro, Verse, Chorus, Verse, Chorus, Verse, Chorus, Chorus, End

In this case we'd be looking to create at least four different types of *SuperJAM* sections – an introduction, a verse, a chorus and an end unit (we might in fact create more than one verse or chorus in order to provide some extra variation). I chose to create a verse section first simply because it is one of the song's two main components (the chorus being the other).

When *SuperJAM* creates a section it asks you for the section's name and a length value. I chose the name VERSE and (having counted the bars present in the sheet music) set the length of the section to 16 bars. At this point *SuperJAM* opens a window containing six rows of coloured gadgets and these correspond to the six instruments that *SuperJAM* uses. The rows are divided into bars and as well as being able to scroll the window horizontally it's also possible to adjust the bar magnification thereby controlling the number of bars on display. Individual beats of instrument parts can be selectively muted and a special gadget is available at the bottom of each bar to turn the whole of the bar into a rest period.



Some of *SuperJAM*'s internal sound editing facilities



The final verse section of the SuperJAM arrangement

For me the drum parts are particularly important and I find it useful initially to listen to them in isolation.

The magnification/reduction gadgets which control the amount of the score shown on the display are useful when you need to temporarily mute complete instruments from the section window. By reducing the size so that the full 16 bars of my example section were visible on the screen it was possible to mute an instrument by wiping the mouse horizontally across the play/mute gadgets of that instrument. Having done this for all instruments except the drums my next step was to listen to what *SuperJAM* had decided to play. With this example I was happy with the country style drum feel but had I not been I would have had to find some other potential style candidate.

The next step involved specifying the key and the chords which form the basis of the section. For the example in question *SuperJAM* was set to the key of G major (because that, as you'll see from the sheet music extract, is the key in which the example piece was written). There is some blank space above the *SuperJAM* instrument bar-content gadgets. If you point above the start of the first bar and click the left mouse button... a small keyboard gadget set appears which lets you pick the root note of a chord.

Under default conditions *SuperJAM* will probably try to guess which chord type is required. This is useful when you are using the program in a real-time jamming mode but, since it is not meant for normal score creation, it is best to turn *SuperJAM*'s automatic chord selection off (a straightforward on/off menu option is provided which can be used to force *SuperJAM* to always provide a chord type menu whenever a chord is added to the score).

You'll see from the screenshot of

my verse section, shown on page 91, that I ended up using this familiar type of chord arrangement also illustrated on that page.

For copyright reasons I cannot provide the complete score but it should be apparent from the first eight bars of the printed score (provided with the Music Sales book reviews) just how easy it is to take the chord symbols from a piece of sheet music and enter them into a *SuperJAM* section.

To create the chorus, introduction and end sections, exactly the same procedure was followed. To be honest you don't need to be able to even play the chords to create these sections - you enter the symbols and SuperJAM works out how to play them automatically!

VARIATIONS ON A THEME

SuperJAM does in fact create its own subtle variations as it plays but if you'd like a bit more variety with a particular section you can do two other things: firstly you could create a similar, but not exactly identical section with slightly different chords. This is a flexible solution but it does of course use up additional memory. The second option is to use the style's inbuilt variations. If you click just below the chord symbol line another *SuperJAM* menu appears and this time it allows intro/end variations, and fills and breaks to be added.

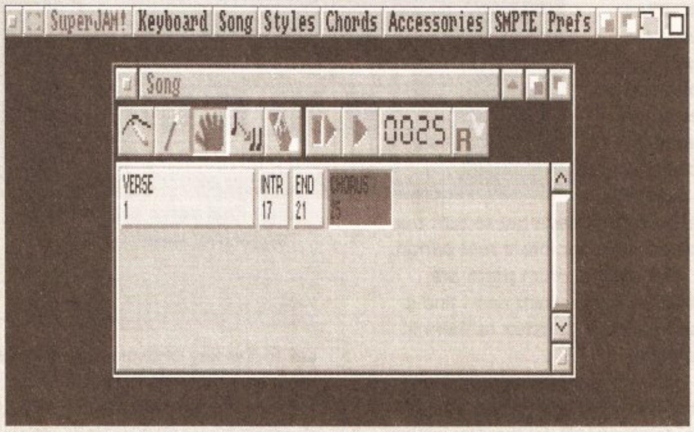
The end result is that *SuperJAM* lets us build up a complete description (in a particular style) which contains all the key, chords, break and fill details which *SuperJAM* needs to play the section. Each verse, chorus and so on, that is created will be given its own section window and these have their own key, tempo and instrument parameters.

EASE OF EDITING

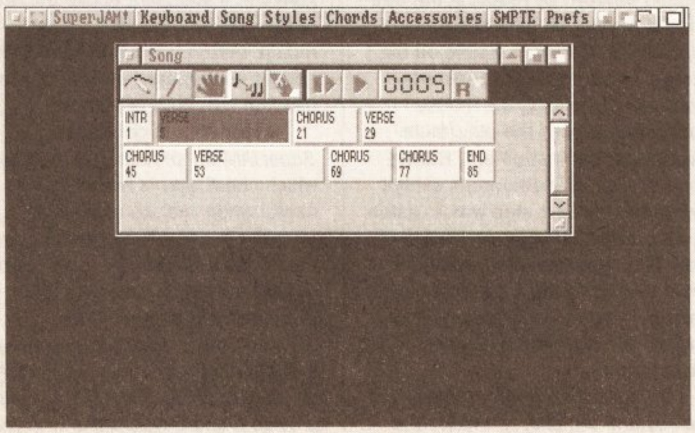
Sketching out and editing these types of descriptions just could not be easier.

If you make a mistake and enter a wrong chord just click on the section window's erase gadget and then touch the chord you want to remove.If you put a chord or a fill directive in the wrong place *SuperJAM* has a special 'hand' gadget which allows you to pick up such objects and move them around.

Another feature which makes SuperJAM easy to use is that you can change the key of all the work you've put into a section by using the up/down key transposition gadgets.



The song sections as they were originally defined



The final song arrangement using *SuperJAM*

JARGON BUSTING • JARGON BUSTING

MIDI – Musical Instrument Digital Interface is a standard devised by electronic instrument manufacturers, allowing for a number of synthesisers to be used by a single keyboard or a sequencer.

Sequencer – A piece of software ona computer (or sometimes built into a keyboard) which stores musical scores and transmits this information in real time via MIDI to synthesisers which will then play it. Some sequencers have the facility to receive and memorise MIDI information from a keyboard so music can be entered 'live' instead of note by note.

MIDI file format – A standard file format which enables MIDI data to be loaded from one program to another.

Real time – Data is entered 'as it occurs' rather than when it is residing in the memory of the computer.

IFF – Interchangeable file format. A file format which applies to several sorts of files for various applications on the Amiga.

PUTTING THE PIECES TOGETHER

All of the detailed construction mentioned so far has been handled by the section window controls but at the stage where the various sections have been created our priorities change. We then become primarily interested in both defining the relative positions of the various sections and in duplicating them to produce a suitable overall song format. *SuperJAM*'s main menu offers a 'song window' which presents a display that contains large block gadgets representing the various sections that have been defined (see the two screen shots to the left).

These section identification gadgets have names and bar number labels which show the positions at which they start within the currently defined song. The song window lets you play and edit the overall sections arrangement and, since it lets you copy section blocks, move them around, duplicate them or delete them it becomes possible to reshape the format of the song in any way that you want. Once sections have been created it is then the song window which enables you to piece the individual fragments together.

LINKING UP TO OTHER SOFTWARE

It is as well to be aware of the two primary options available for transferring *SuperJAM* compositions to other software packages: firstly, if you have an Amiga based sequencer and another Amiga machine (or another non-Amiga sequencer or MIDI recorder available) then *SuperJAM*'s MIDI output can be recorded in real time. Secondly, *SuperJAM* provides an option for saving its output data as a Standard MIDI File. I've used both approaches and at the moment I prefer the latter.

Another facility which could be useful for internal sound users is that *SuperJAM* allows the final internal sound arrangement to be stored as a 'digital recording'.

THE BOTTOM LINE

Whether you prefer using your own ideas, or arrangements taken from Busker books, SFX style guides or any other published sheet music you are likely to find *SuperJAM* of immense value as an arrangement tool. There are also an infinite number of satellite uses as well. If, for instance, *SuperJAM* was heard to be playing some particularly interesting drum parts it is possible to mute the other instruments and then write out a few bars of the isolated drum data as a MIDI file. That would give you ready-made drum patterns to use with any other program that can read in MIDI file data (eg most sequencer programs). Similarly with *SuperJAM* generated bass lines or piano riffs; if you like certain riffs, just isolate and export them for re-use.

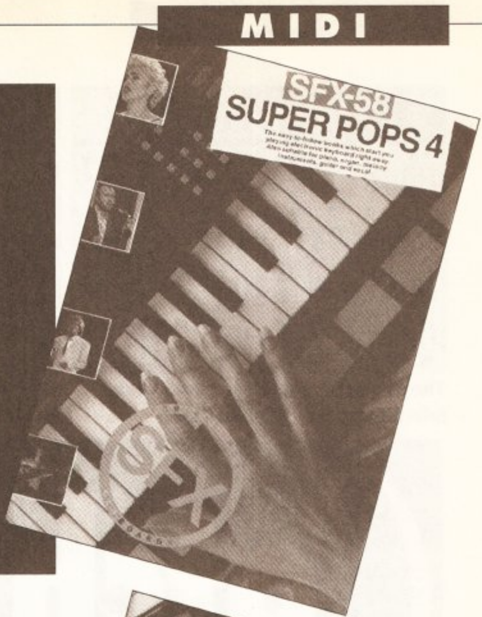
SuperJAM is one of the most interesting Amiga music programs that I have ever used and despite a few teething problems I wouldn't hesitate to recommend its use.

SHOPPING LIST

SuperJAM.............................. £99
by Blue Ribbon Soundworks

Distributed in UK by:
Zone Distribution
Unit 6/70, Eurolink Cntr
49 Effra Road,
LONDON SW2 1BZ
☎ 071 738 5444

SOUND FX



More help for the growing number of Amiga MIDInauts as Paul Overaa looks at a range of songbooks which are ideal for the novice musician...

As far as coming to terms with musical notation is concerned, one of the biggest improvements over the last few years is the introduction of SFX style music books. SFX notation is based on the scheme whereby the melody line of a song is provided using conventional notation although shorthand chord symbols are used rather than writing the notes of the chords out in formal notation. Here's how they can help.

Of the many new Amiga users involved with MIDI many are having to learn about sequencing *and* music at once which only adds to the 'learning curve' problems. The result is that even though the sequencer has made it possible for anyone to create a reasonable sounding multi-instrument arrangements things are still not always plain sailing.

There's a limit to what you can create with single finger melodies which means that any aspiring keyboard player will have to learn a few chord shapes. Soon after that the realisation that not all chord combinations sound right when played together means that it's not long before a bit of 'musical guidance' becomes needed.

THE LEARNING CURVE

There's no doubt that a little 'keyboard technique', with a smattering of music theory (musical notation, keys, scales, chords etc) goes a long way. The only trouble is that this, when combined with learning about MIDI and sequencing, means that the would-be musician ends up with quite a lot to learn.

Over the last few months I've spent a lot of time talking about the MIDI/music scene but I've not said much about music itself, although there's no reason why we shouldn't point you in the direction of other publications that will provide the help. That, in a nutshell, is exactly what the rest of this is about.

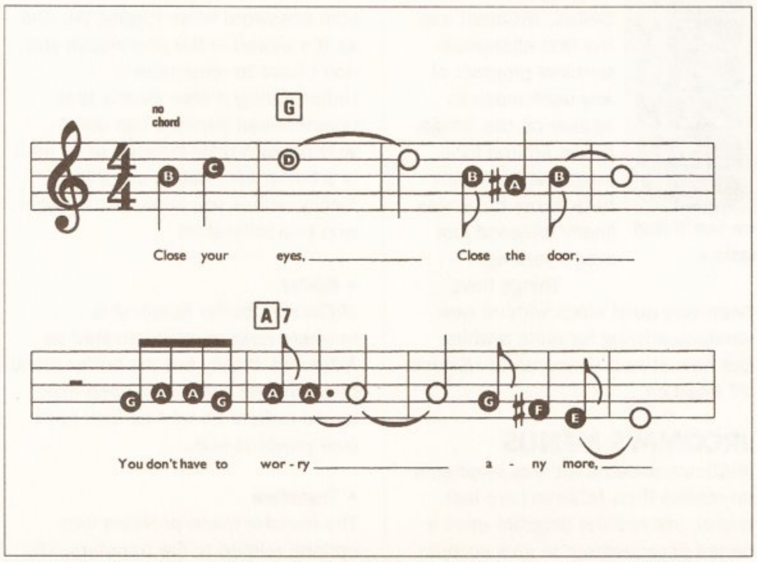
SFX music includes a number of characteristics which makes it ideal for the beginner. Note names are written inside the notes (making it easier to work out and play the melody line) and awkward key signatures are avoided (notes which need sharps or flats are treated as accidentals, so you should see a sharp or flat sign in front of each note rather than being expected to imply the presence of such items from the key signature alone).

MUSIC FOR THE EARS

SFX books also have another difference: many beginners publications seem to expect the would-be musician to be content learning to play via pieces of music such as *Greensleeves* and *Baa Baa Black Sheep*. Perhaps I shouldn't knock them, but the point I'm trying to make is that given the choice most people would prefer to learn about music by playing songs they like to listen to (as opposed to playing something just because it's easy). The good news as far as the SFX series is concerned is that although the arrangements and the notation have been kept simple the range of the material available for learning from is enormous. You'll find books of classical themes, country music, jazz and countless rock and pop. The later publications include artist-specific books (Beatles, Michael Jackson, Phil Collins, Billy Joel, Paul Simon, Whitney Houston etc). You'll even find a couple of SFX nursery rhyme books so if you are hell bent on starting your musical career by playing *Baa Baa Black Sheep*, even you will be catered for!



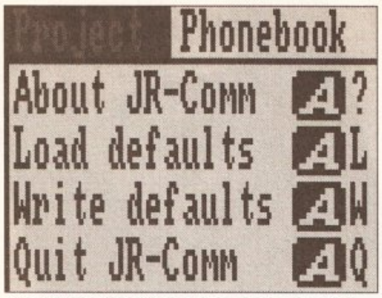
The SFX books are published by Wise Publications and distributed by Music Sales Ltd. You'll find many of them in your local music stores but they can also be ordered from Music Sales Limited. There are too many titles to list but if you would like a catalogue you can get one by writing to Music Sales Ltd, Newmarket Road, Bury St Edmunds, Suffolk IP33 3YB (inc £1.50 for P+P)



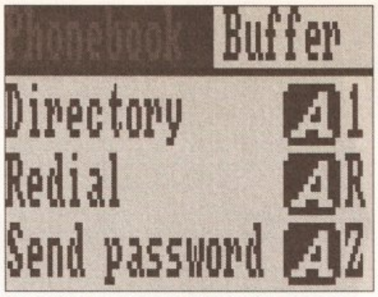
Part of the Bob Dylan's *I'll be your Baby Tonight* from *SuperPops 4 (SFX-58)*. Copyright of DWARF Music 1991, reproduced courtesy of Music Sales Ltd

Perhaps the easiest way to describe an SFX style arrangement is to show you one (see left).

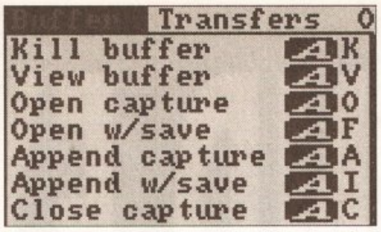
In short whether you want rock, pop, classics, pub singalongs or music from shows like Oliver or West Side Story the chances are you'll find a suitable offering from within the SFX music book series. The songbooks cost £3.95 each and on average include around fifteen to twenty songs per book. Each book contains chord charts and notes on reading musical notation and, as you'll see from the example extract, you even get the words as well (if there are any). A number of SFX keyboard tutor books are also available for providing help with such things as keyboard playing technique, music theory, chord construction, and sight reading. AS



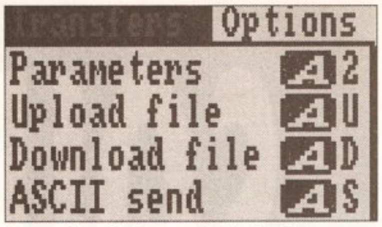
The Project menu gives some useful information on *JRComm* itself



Use the Phonebook menu to access the dialling facilities



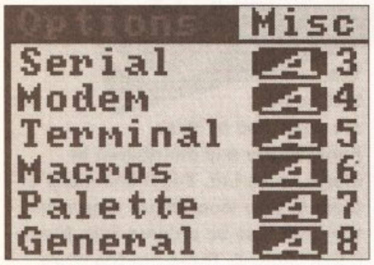
The range of options to be found under the Buffer menu



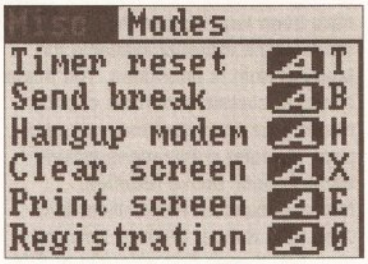
The nitty gritty – uploading and downloading under the Transfer menu

Catch up on Comms

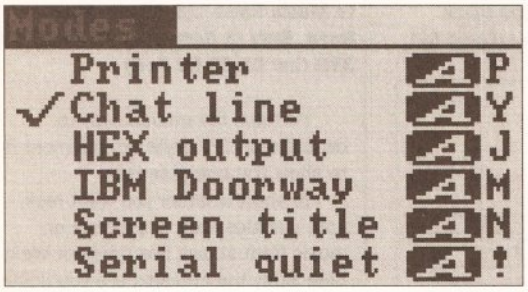
This month Phil Harris takes a detailed look at JRComm, the only serious competitor to NComm, and concludes our two part script tutorial with a couple of examples...



Use the Options menu to gain access to the main configuration facilities



A bundle of options with no other home are found under Miscellaneous



The final menu in JRComm is Modes where you'll find the options for your comms set-up's operation

After last month's thorough look at *NComm*, this month it's the turn of *JRComm*, the other major comms package. I'll be investigating what lies behind the menus and requesters and seeing whether or not it lives up to its rival *NComm*. There's also the final part to our comprehensive guide to scripts, where we'll be taking a look at some examples.

JRCOMM

Nothing to do with Dallas, *JRComm* was the first shareware terminal program of any usefulness to appear on the Amiga. It was around for a long time in various beta forms but it was finally released just over a year ago.

Things have been very quiet since with no new versions arriving for quite a while. But how does it shape up to *NComm 2*? Read on...

JRCOMM'S MENUS

JRComm places a lot less emphasis on menus than *NComm* (see last issue), instead the program uses a series of requesters to give access to the multitude of configurable options. First, let's take a look at the menus which are available, then we'll continue with a closer look at the requesters available.

• Project menu
The project menu provides four general purpose options enabling you to load and save your current configuration, find out all about the program and of course, exit when you've finished.

• Phonebook
The second menu, the phonebook, provides telephone directory and dialling facilities. Three options give you access to your telephone directory, a redial facility and a send password option which sends the password defined in the dialling directory to the serial port.

This enables you to quickly send your password when logging on, and as it's stored in the phonebook you don't have to remember it. Unfortunately it also means that unauthorised persons can obtain your password for dubious uses so it is a better idea not to use this facility unless you know your system won't be infiltrated.

• Buffer
JRComm's buffer handling is nowhere near as sophisticated as *NComm*'s facility but the buffer menu does provide options to open disk based buffers as well as look back over previous text.

• Transfers
The transfer menu provides four options related to file transfers. The parameters option is where the real power is accessed. This takes you to the "File transfer parameters" requester (see below) where you can control the types of protocols used and a whole host of ZModem protocol options including resume.

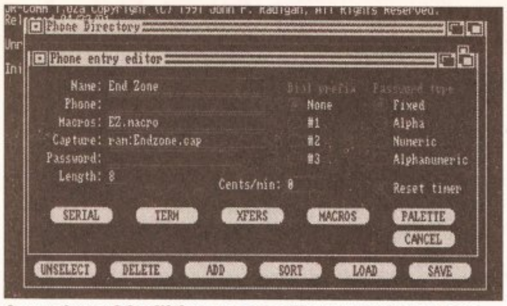
Also available from this menu are the standard upload and download options and an ASCII send facility, the ASCII capture is capability covered by the buffer menu.

• Options
The options menu is used to gain access to the main configuration facilities in the program. From there you can get through to requesters to configure serial port, modem, terminal emulation, macros, palette and the all important general options.

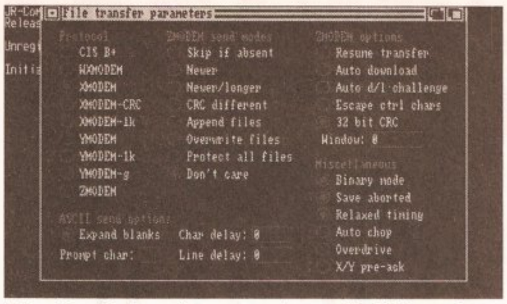
General options covers such important aspects as filenames for data files, the phone book, buffer sizes, paths for downloads and uploads and which clocks and timers you wish to have available. Together, these configuration dialogs cover just about every conceivable item you could require, and even some extras which you won't.

• Miscellaneous
The miscellaneous menu gives you access to don't-fit-in-anywhere-else options such as resetting the on-line timer, sending the break character, hanging up the modem, clearing the screen and registering the product.

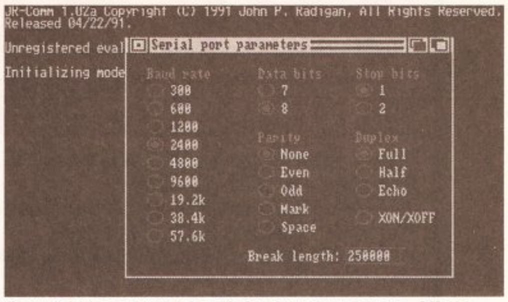
• Modes
The last menu controls the modes in which the terminal can operate. For instance, whether you have a chat line where everything you type is



A number of facilities are on offer under the phone directory requester



Alter the file transfer parameters with *JRComm*'s file transfer protocols



Control the set-up's serial port requesters. All the standard stuff is here, baud rate, parity, etc

placed before it is sent to the board, or whether a hard copy is required on the printer. This menu also provides the option of turning off the menu bar and outputting received text in Hexadecimal, among other things.

REQUESTERS GALORE

Whereas *NComm* provides the user with a selection of menus from which all the required configuration options can be controlled, *JRComm* uses a selection of requesters.

These requesters contain a large number of check boxes which are used to turn options on and off. This has the advantage of making it very easy to edit the options, and to see which options are enabled. The disadvantage is the time it takes the program to display some of the larger dialog boxes. This can be annoying although as you shouldn't need to configure the program too often it should be OK.

Now we'll take a look at the requesters available to see what *JRComm* really has to offer.

• Phone directory

The telephone directory takes the form of two requesters. The first gives a general list of the boards in the directory enabling you to select several numbers for dialling, add new options, load and save and, of course, edit the entries.

Selecting edit takes you into the "Phone entry editor" requester. Here you can enter the name and number of the board and the name of a macro file which is to be loaded whenever the board is dialled. A default capture filename can also be given along with the cost of dialling the board (unfortunately this is only calculated in cents/min).

Other gadgets within the dialog enable you to edit the serial port, terminal, transfer protocol, macros and palette for this particular board. Useful if you call a lot of boards although many will use the same options.

• File transfer protocols

JRComm provides a total of nine different transfer protocols, although they are mainly variations on ZModem, XModem and YModem. Most boards will support straight ZModem though so this isn't really a problem.

This requester also provides a few general options such as binary mode, whether aborted downloads should be saved and whether there are delays for ASCII sends.

The reset of the space is taken up with no less than 14 ZModem options controlling all manner of settings including the mode, resume failed downloads and automatic downloads.

"The requesters have the advantage of making it very easy to edit the options."

• Serial port parameters

The serial port parameters are pretty standard stuff, the baud rate, parity, number of data bits, number of stop bits and the duplex mode can all be controlled from here.

• Modem parameters

The modem configuration dialog gives you complete control over the initialisation and dialling codes sent to your modem. The response codes which *JRComm* expects your modem to return can also be modified, along with redial delays, the maximum number of attempts at dialling, the dial timeout and pacing of characters.

You can also enter three different dial prefixes and the telephone directory allows you to set which one will be used when calling a board. This sort of facility is ideal for use with Mercury where you can add your Mercury code to all numbers you are going to dial.

• Terminal parameters

This large requester box controls everything about the way in which *JRComm* handles incoming and outgoing characters.

From here you can set capture filters for ANSI, backspace and control characters, turn on emulation of one of seven different terminals including the rare Skypix system. You can control carriage return, line feed and end of line handling and a whole host of miscellaneous items including backspace handling, line wrap, number of colours and cursor blink.

One of *JRComm*'s strengths is the amount of terminal control it gives you. For a beginner the options are overwhelming, although the defaults will usually be fine.

• Function key macros

As with *NComm*, *JRComm* allows you to define the actions of function keys, but it also allows you to define their action when used in conjunction with the CONTROL, SHIFT and ALT keys.

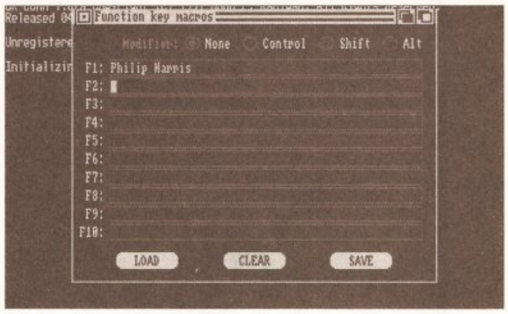
• Palette

JRComm supports up to 16 colours on a custom screen and the palette requester allows you to change these. Nothing special, it's just a simple palette control panel really.

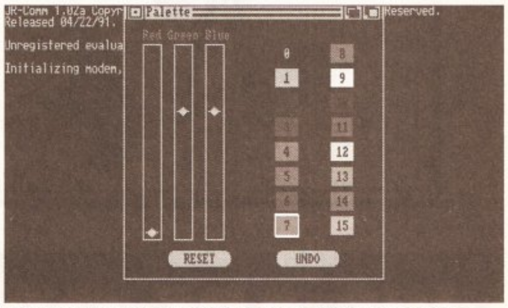
• General parameters

This is another *big* requester, this time with twenty-nine options. The parameters cover everything from which information should be shown on the status line at the bottom of the screen to the filenames which the program should use as the default telephone directory, capture file, logfile and macro definitions.

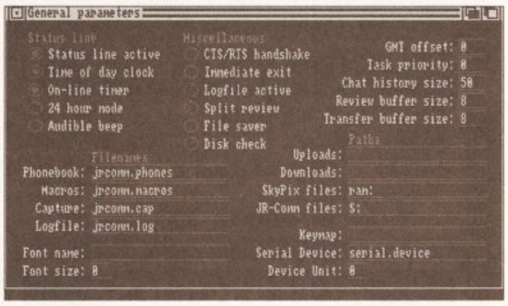
All in all, *JRComm* provides a very complete terminal program, with a very high level of configurability. This is its biggest drawback though. For most users a lot of this won't be used at all, although the sensible default values will be sufficient for most users until they learn more about the comms world.



Define the actions of function keys when used in conjunction with CONTROL, SHIFT and ALT



Carry out palette control with *JRComm*'s easy to use palette requester



A whopping twenty-nine options in all on the general parameters requester

SUMMING UP

So which is best? Both *NComm* and *JRComm* are very good programs, very complete and very useful. Both are now shareware and there is little to choose between them. I would have to go for *NComm* though, if only because it is actively supported and a new version of *JRComm* hasn't arrived for some time.

And, of course, *NComm* has a wonderful script language which leads us nicely on to the next section.

now turn to page 97 for the tutorial on scripts

SCRIPTING FOR THE MASSES

PART 2 EXAMPLES

Last month we took a look at some of the commands available in the NComm script language. This month we'll round off our tutorial with some examples.

Our first script is simply an example of how *NComm*'s script language could be used to automatically log on to a board, and leave you at the main menu. Every board is different of course but the same techniques apply to most boards.

EXAMPLE SCRIPT 1
Logging on

1. CAPTURE "ram:justincase.cap"
2. WHEN "More (Y/n)" SEND "Y\n"
3. DIAL "Fun Times BBS"
4. CONVERSE "twice to enter board" "\x1b\x1b"
5. CONVERSE "Please enter your first name:" "Boris"
6. CONVERSE "Please enter your last name:" "McBane"
7. CONVERSE "Calling from East Grinstead (Y/n)?" "Y\n"
8. CONVERSE "Please enter your password:" "\p\n"
9. WHEN "Read bulletins now?" SEND "n\n"
10. WAIT "Your wish is my command..."
11. BEEP
12. CAPTURE OFF

STEP BY STEP
Line action

1. First we turn on the capture, just in case there are any problems. By directing it to RAM we don't waste disk space, but this means that we have the information if we need it.
2. Now we set up a WHEN statement (see last issue) to ensure that we skip any screen full prompts automatically. This stops us sitting at a prompt until we get thrown off the board.
3. Then we dial the board we want.
4. Most boards have a front end program which requires you to hit a key twice (usually ESC) to get into the board.
5. Then we wait for the board to ask for our first name.
6. And our second name.
7. Some boards ask you to confirm where you are calling from to differentiate between callers with the same name.
8. And then we have to send our password. The \p option sends the password set in the telephone directory so it must be set prior to the call. Alternatively you could have the program wait and type in the password by hand.
9. Most boards have a bulletin section where important news items are placed. But you won't always be offered the chance to read them if none have been updated recently. This line sets up another WHEN statement to get past the bulletin prompt, if it occurs.
10. Now we wait for the main menu prompt to appear.
11. When it does, alert the user with a beep.
12. And close the capture file.

In just twelve lines we have logged on to a board completely automatically. Saving time, money and effort.

The second example script is a "generic" script designed to be able to log on to most boards. This script relies on the fact that most boards have very similar log on sequences and the possible combinations can be covered quite easily.

EXAMPLE SCRIPT 2
Generic Log on

Obviously this sort of script will require careful observation when you use it on a new board but as time progresses the script can be tailored to cover a wider variety of boards.

1. CAPTURE "ram:wewillneedthis.cap"
2. TIMEOUT 5
3. CONVERSE "nter " SEND "\x1b\x1b"
4. WHEN "ore " SEND "Y\n"
5. TIMEOUT 60
6. CONVERSE "ame " "Harry"
7. CONVERSE "ame " "Campbell"
8. WHEN "alling " SEND "Y\n"
9. CONVERSE "ssword " "\p\n"
10. DWHEN "alling "
11. WHEN "ulletin " SEND "N\n"
12. BEEP
13. CAPTURE OFF

LINE ACTION

1. Turn on capture.
2. Set the timeout value to 10 seconds to make sure we don't wait too long at the next converse.
3. Wait for a "Press ESC twice to continue" type request or for five seconds. This an example of how the timeout can be used to cover all eventualities, if this board doesn't need you to press a key, this command will have timed out by the time we arrive at the name prompt.
4. Then we set up a WHEN command to cover any "More?" requests we get. We can never be sure exactly which string will be used so we have to find a general solution, most prompts will include the word "more" so we use the end of that. We only search for a very small string to make sure we aren't caught out by unusual capitalisation.
5. Then we reset the timeout to a longer period to give the board plenty of time before we exit commands.
6&7. Now we wait for the board to send "ame ". This signifies that the board is waiting for your name. Some boards ask you to enter your name in two parts while others want it all in one go. To handle this we will send it in two parts anyway, both triggered by the string "ame ". If the board is expecting two halves – fine, if not it should respond with a what is your second name prompt anyway.
8. Now set up a WHEN command to cover the "Calling from?" prompt if there is one.
9. Then wait for a password request and send the phonebook password.
10. We no longer need the WHEN command so delete it to stop unwanted characters being sent.
11. Set a WHEN statement just in case we are asked if we want to see the bulletins.
12. Beep because we've probably reached the main menu.
13. And finally turn off the capture file.

This script assumes that you have already dialled the number and so can be used by defining it as the script for telephone book entries which don't have custom scripts.

As a simple example it shows just how powerful the script language is. It should be able to cope with many boards – any which don't work give you an opportunity to practise your script writing.

The third example is a method of automatically downloading a given file from a predefined board. By careful coding a similar script could be used to attempt a download from any board.

EXAMPLE SCRIPT 3
Automatic file download

1. CAPTURE "ram:justincase.cap"
2. SET $filename = $FILEREQ
3. WHEN "More (Y/n)" SEND "Y\n"
4. WHEN "File not found" GOTO Logoff
5. DIAL "Files Galore BBS"
6. CONVERSE "Please enter your name:" "Herman Von Jones"
7. CONVERSE "Please enter your password:" "\p\n"
8. CONVERSE "Command?" "F\n"
9. CONVERSE "Command?" "D\n"
10. CONVERSE "Filename 1" $filename
11. DOWNLOAD "ram:dummy",Z
12. CONVERSE "Press a key to continue" "a"
13. CONVERSE "Command?" "M\n"
14. CONVERSE "Command?" "L\n"
15. CONVERSE "Subject" "Many thanks oh mighty one\n"
16. CONVERSE "Change anything?" "N\n"
17. DELAY 5
18. ASCSEND "DHO:MESSAGES\THANKS.ASC"
19. SEND "\S/n"
20. SEND "S/n"

Logoff:
21. CONVERSE "Command?" "*\n"
22. CONVERSE "Are you sure you want to log off?" "Y\n"
23. HANGUP
24. BEEP
25. CAPTURE OFF
26. END

LINE ACTION

1. Turn on capture.
2. Put up a file requester and request a filename from the user, storing it in the variable $filename.
3. Set up a WHEN command to handle "More?" prompts.
4. Set up a WHEN command jump to the logoff sequence to exit the board and the script, if the file requested does not exist.
5. Dial the board.
6. Enter your name…
7. … and password from the directory.
8. Wait until the command prompt appears and then move to the Files area.
9. Select download.
10. When the program prompts for the filename, send the filename which the user selected. At this point, the WHEN command defined previously will kick in and exit the BBS if the file is not found.
11. Download the file using ZModem
12. Wait for it to finish and press a key.
13. Wait for the command line and go back to the main menu.
14. Select the "Leave a message for the Sysop" option.
15. Enter a subject.
16. Respond to a "Change?" prompt.
17. Wait five seconds to get into the editor.
18. Send your standard "Thank you for the file" text.

19&20. Exit the editor and save the message.

21. Select the log off option.
22. Confirm that that is what you wish to do .
23. Hang up.
24. Beep to inform the user we've finished.
25. Turn capture off.
26. End the script.

Although this script is purely an example, it won't require much tailoring to match a real BBS.

EXAMPLE SCRIPT 4
Automatic message handling

In our final example script we will present a method of logging on to a fictional conferencing system, uploading replies, downloading waiting messages and then forwarding them to another BBS.

This sort of script would be ideal for accessing a system such as CIX and forwarding the messages to your favourite BBS.

```
1. CAPTURE "ram:conference.cap1"
2. CONFIG "TIX.cfg"
3. TIMEOUT 120
4. RESUME OFF
5. REQUEST OFF
6. DIAL "Techy Information eXchange"
7. WHEN "Continue?" SEND "Y\n"
8. CONVERSE "Type TIX to login" "TIX\n"
9. CONVERSE "Nickname?" "bananaman\n"
10. CONVERSE "Please enter your password:"
    "\p\n"
11. PRINTER ON
12. WAIT "Mail Directory"
13. PRINTER OFF
14. CONVERSE "Command:" "Brief\n"
15. CONVERSE "C:" "Upload\n"
16. UPLOAD "dh0:messages\reply.scr"
17. CONVERSE "C:" "Execute\n"
18. WAIT "Execute finished"
19. CAPTURE OFF
20. CAPTURE "ram:messages"
21. REPEAT
22. SEND "Read\n"
23. WAIT "End of message"
24. INPUT $text "\r"
25. UNTIL $text == "No more messages"
26. CAPTURE OFF
27. CAPTURE "ram:conference.cap2"
28. CONVERSE "C:" "Goodbye\n"
29. CONVERSE "Are you sure?" "Y\n"
30. CD "dh0:c"
31. CLI "lha a ram:msgs.lha ram:messages"
32. CONFIG "Dirty.cfg"
33. DWHEN "Continue?"
34. WHEN "Read on?" SEND "Yes\n"
35. DIAL "The Dirty Squirrel BBS"
36. CONVERSE "Press [ENTER] to continue" "\n"
37. CONVERSE "Enter your name please" "Johan
    Brettson"
38. CONVERSE "And your password please Johan"
    "\p\n"
39. WHEN "would you like to see our news
    bulletin?" GOSUB ReadBulletin
40. CONVERSE "What now?" "PMU"
41. CONVERSE "Archive type" "L\n"
42. WAIT "Upload message file now"
43. UPLOAD "ram:msgs.lha",Z
44. CONVERSE "What now?" "QLLY\n"
45. HANGUP
46. CAPTURE OFF
47. QUIT

ReadBulletin
48. PRINTER ON
49. SEND "Y\n"
50. WAIT "Thank you for taking the time to read
this news"
51. PRINTER OFF
52. RETURN
```

LINE ACTION

1. Turn capture on.
2. Load the appropriate configuration for the system we are calling.
3. Set the timeout to a nice high level because conferencing systems can often be very slow.
4. Turn ZModem resume off, we don't want to accidentally mess up any downloads.
5. Turn off the system and *NComm* requesters for unsupervised use.
6. Dial the conferencing system.
7. Set up a WHEN command to handle screen full prompts.
8. Conferencing systems such as CIX often have an initial logon prompt which means you have to type something specific to get onto the system.
9. Then you have to send your nickname.
10. And of course your password.
11. Conference systems very often have a news item which comes up as you log on so we'll turn the printer on to get a printout of any news messages for later.
12. Wait until the system starts printing out details of your E-Mail directory.
13. Turn the printer back off again.
14. Wait for the command line and make the prompt brief.
15. Tell the system that you are uploading a script.
16. Do the actual upload.
17. Tell the system to execute the script. This is a method available in conference systems such as CIX whereby a text file containing a list of normal commands can be executed to allow automatic posting of messages etc.
18. Wait until the system signals that it has finished.
19. Turn capture off.
20. And open a new file to store our messages in.

21-25. This next section is a loop. It starts off by sending a read command to read the next message and then waits for the end of message signal. It then gets the next line of text to see what it says. It will continue to loop round until the text line says "No more messages" in which case it will drop out of the loop and carry on.

26. Turn the message capturing off
27. Reopen another general log
28. Exit the system
29. Yes we are sure, to be safe we should hangup here.
30. Change the AmigaDOS directory to the command directory.
31. Use the CLI command to call the archiver LHA to pack up the message capture file.
32. Load a new configuration file.
33. Remove the WHEN definition for the conferencing system.
34. And create a new one for this board.
35. Dial our favourite BBS
36. This time we have to press enter to get into the board.
37. Then we enter our name.
38. Closely followed by our password.
39. Then we create a WHEN statement that will jump to a subroutine to read the news bulletin if one exists.
40. When we get to the main menu prompt we use the hotkey facility available on most boards to quickly get to the place we want. If a board has hotkeys it means that you do not have to press RETURN after each menu selection, and you can stack commands up to avoid having to wait for the menu to appear each time.
41. By using our hotkeys we will have told the BBS that we want to upload a message file. Now the board has asked us for the type of archiver we used, so we select option L for LHA.
42. Now wait for the BBS to signal it is ready.
43. And upload the file using ZModem.
44. When the command prompt reappears we use the hotkey facility to quickly exit the board.
45. Then we hang up, just in case.
46. Turn capture off.
47. Exit the program.

The remaining lines are a small subroutine which is called if the second BBS tells us there is a news file waiting.

ReadBulletin

48. Turn the printer on for a hard copy.
49. Say we want to read it.
50. Wait for the news file to finish
51. Turn off the printer.
52. Return from the subroutine.

CONCLUSION

That concludes our look at *NComm* scripts, with all this power at your fingertips you should be able to write scripts for just about anything, saving you time and money.

NEXT MONTH

That's it for now, next month I'll be looking at setting up your own BBS, how it can save you money, and cause you heartache. See you then.

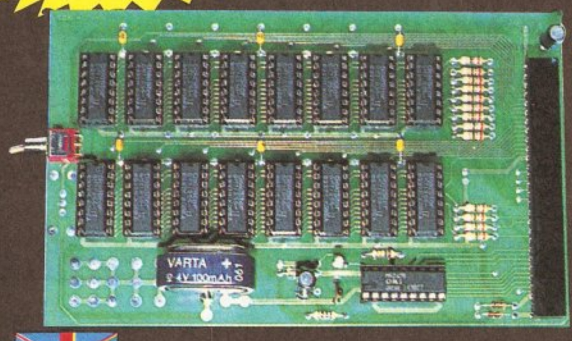
Philip Harris can be contacted as piharris at CIX (081 390 1244) or as PHILIP HARRIS at the End Zone BBS (0524 752425).

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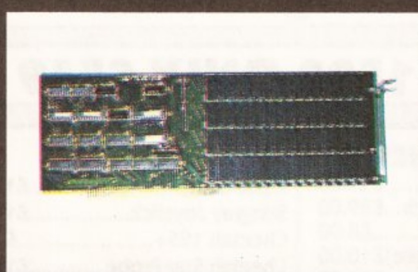


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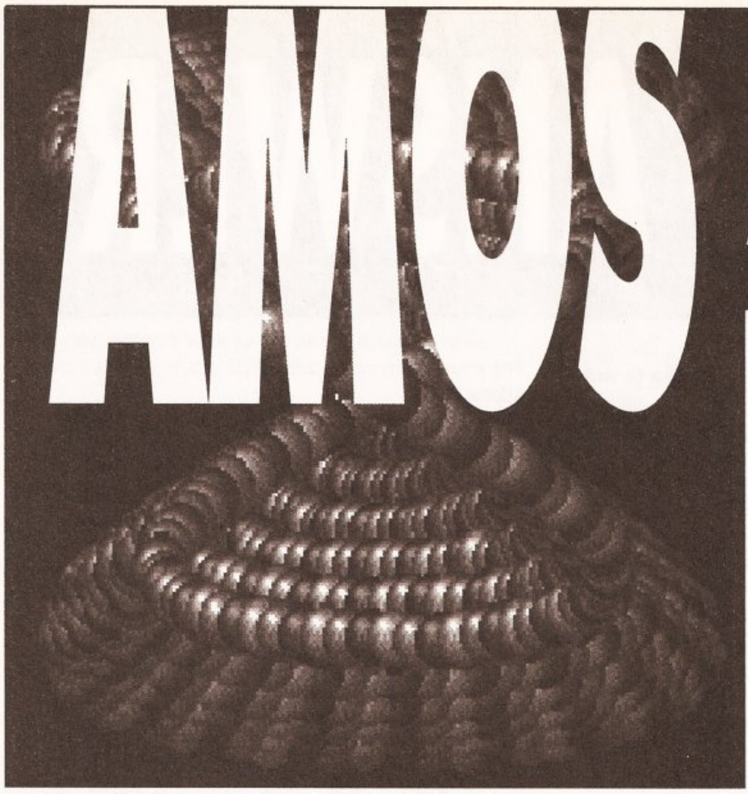


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AMOS ACTION



If you want to see a demo that really shows off what AMOS is capable of, then check out the new *Fanatix Megademo 6*

Whether you're a seasoned AMOS programmer or a complete novice, Jason Holborn's here to save the day. Don't miss the first in a new series of AMOS for beginners or the latest instalment on games programming

Welcome to another exciting instalment in our continuing journey through the world of AMOS. Our mission – to bring you the hottest tips, the most up to date news plus a goodly splattering of hints and advice for AMOS users everywhere.

If you own AMOS, then you would be a fool not to tune into these pages. Don't forget though – this is your column too, so why not write in if you've got any tips or suggestions which you feel would make the best AMOS column around that little bit better.

Don't forget our AMOS helpline either – if you've got a problem that has been stopping you from putting the finishing touches to that megagame which is going to pay for your new Ferrari, then we'll try our very best to solve it for you.

> *"If you wouldn't know a copper interrupt from a rowdy policeman, stickwith us... "*

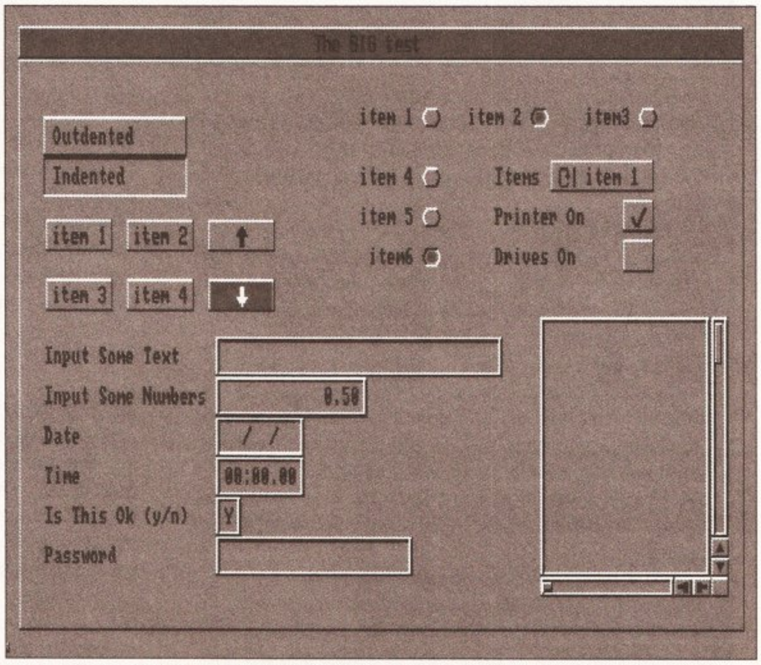
Since we set it up the new section of AMOS Answers up, over three months ago, we've had a tremendous response which only leads us to believe that there's an awful lot of suffering AMOS owners out there.

In an attempt to make life with AMOS a little more bearable, this month sees the start of another new feature which is to become a regular part of the AMOS column. Put simply, AMOS for Beginners is a crash course in AMOS programming. The aim is to teach you virtually everything you need to know to get the most out of AMOS.

So if you're the kind of person that wouldn't know a copper interrupt from a rowdy policeman, then stick with us over the coming months and we'll have you churning out AMOS games and demos with the best of 'em.

NCOMMAND UPGRADE

AMOS application programmers may be interested to learn that Oasis Software has upgraded its AMOS *NCommand* extension (reviewed in *Amiga Shopper* issue 10), a very powerful suite of routines which enable you to quickly and easily add a Workbench 2.0-like user interface to just about any program.



Add a Workbench 2.0-like user interface to your AMOS applications with the recently upgraded *NCommand* extension

TIP OF THE MONTH

Here's a very handy routine sent in by *Amiga Shopper* reader and AMOS expert Roger Nutter. By inserting the following code into the main loop of the game which we are progammming, you'll be able to freeze the game at any point simply by pressing a mouse button. Once frozen, a small crosshair display will appear and either the graphic co-ordinates or the nearest text display position will be printed in the top left hand corner of the screen depending upon which mouse button was pressed. You'll then be able to work out where to place text and sprites without the guesswork usually associated with this process. Nice one Roger!

```
REM Put this line inside ↲
your main game loop
'
If Mouse Key Then Proc ↲
WHEREMOUSE
'
Procedure WHEREMOUSE
Amal Freeze : Curs Off : ↲
Limit Mouse
Paper Point (0,0) : ↲
Change Mouse 2 : Show On
Repeat
MK = Mouse Key : Locate 0,0
XM = X Screen(X Mouse) : ↲
YM = Y Screen(Y Mouse)
If MK=1
Print "Graphic X = ";XM;" ↲
Y = ";YM;Space$(6)
Else
Print "Text X = ";X ↲
Text(XM);" Y = ";Y ↲
Text(YM);Space$(6)
End If
Until MK=0
Hide On : Change Mouse 1 :↲
Print Space$(23) : Amal On
End Proc
```

Quite a few of the routines within *NCommand 2.03c* have been redesigned to make them look and behave that bit closer to the gadgets and requesters within Workbench 2.0.

Other changes to *NCommand* include a couple of new programs not forgetting an upgraded screen designer and a brand spanking new archiver program called AMARC which leaves most of the PD competition standing. These join an already impressive list of *NCommand* demo programs including a picture converter which enables you to convert Amiga images to and from ST Degas format, a disk label printer and a couple of others.

NCommand and the new NCommand Extras disk are both available from Oasis Software which lives at 392 Birch Road, Wardle, Rochdale in Lancashire. Failing that, you can talk to them directly on 0706 376572.

"The Fanatix Megademo 6 is one very impressive demo which has more bobs than the Bank of England."

AMOS PD NEWS

If you are looking for a demo which really shows off what AMOS is capable of in the hands of an experienced programmer, then check out the new Fanatix Megademo 6. (An example of the sort of complex images you can see in the demo is shown on the opening page of this column).

This two disk demo has some of the most impressive visuals created using AMOS in a very long time indeed including swirling plasma effects, parallax scrolling (if you're not sure how to achieve this visual effect for yourself, look out for a tutorial on creating parallax scrolling soon!).

The Fanatix Megademo also boasts one very impressive demo which has more bobs than the Bank of England. What's more, Fanatix very kindly includes the complete source code to its demo so you can steal more than a few good ideas and programming tips from its well commented source.

This new demo can be obtained from Deja Vu PD who can be contacted on 0942 495261. Buy it and prepare to be amazed.

AMOS ANSWERS

ANIM ANSWERS

I'm new to AMOS programming and I would like to write a game.

Could you please explain how to get AMOS to run an animations in ANIM 3 and ANIM 5 format? I understand that Europress does plan to build this facility into a future release, but I'd like to be able to do it now. Is it possible?

Brian Linwell
San Francisco
California

As you pointed out yourself, there is currently no way to load and run animations from within AMOS. I'm sure Europress will build this facility into AMOS Professional, but it's still a long way off.

In the meantime though, you can get around this limitation by taking advantage of AMOS' ability to run external programs. All you need then is a CLI-based program which will load and run the animation.

On the AMOS 1.34 updater disk (which is available from Europress) you'll find a little demo program which contains a routine called _EXECUTE – this passes control to an external program. If you want to see the output from the program, this function must be followed by an 'AMOS TO BACK' instruction.

SPRITELY CHARACTER

After getting my hands on AMOS The Creator, I've found it hard going. My main problem goes something like this... I've created a few sprites using the AMOS Sprite Editor but I still can't figure out how to load, display and move them on the screen from within AMOS. I've read the AMOS manual over and over again, but a few of the explanations are a little brief. I'd be grateful for any help.

Simon Chan
Stanley
County Durham

If you're having problems sussing out AMOS, I'd strongly recommend that you check out *Easy AMOS*, a much friendlier and easier to use version of the AMOS Interpreter.

What's so great about *Easy AMOS* is the quality of its manual – as you say yourself, the AMOS manual does cut a few corners in its explanations, but *Easy AMOS* is so *easy* to understand that even a complete numbskull could suss it out.

If you can't quite afford the upgrade price, then check out the program below detailed below. It's all pretty self explanatory – just type it in (don't forget to substitute 'SpriteBank.ABK' for the filename of your spritebank though) and run it and you'll have a sprite moving across the screen in a sort of Space-Invader fashion. Try playing around with it and you'll soon get the hang of it.

You may also be interested in the AMOS for complete beginners feature which starts this month within these very pages. It's designed to introduce complete beginners to the AMOS language and will take you step by step through AMOS.

After little more than a couple of months, you should find yourself churning out AMOS programs at a rate of knots!

Anyway here's that listing to be going along with for starters.

```
Load "SpriteBankFilename.ABK"
Double Buffer
Get Bob Palette
For Y = 0 to 200 Step 25
For X = 0 to 320 Step 4
Bob 1,X,Y,1
Wait VBL
Next X
Next Y
```

SCREEN SCENE

I've started to write a paint package in AMOS which uses several different screens at once – one for a status bar, another for an icon strip and a final screen that you paint on.

Unfortunately AMOS seems to take the last screen opened as its work screen, making it impossible for me to write to my first two screens. Is there a way to redirect AMOS to any screen so that commands like DRAW and PLOT work on other screens? I've searched through the AMOS manual, but I can't find any way of doing it.

James Burton
Bradford-Upon-Avon
Wiltshire

I'm not surprised you can't find the command in the AMOS manual – the section which covers it is about four lines long. The command you need is SCREEN ScreenNumber where ScreenNumber is the pointer to the screen that you wish to redirect output to. If, for example, you had three screens open, numbered 0, 1 and 2, you could switch to screen 0 using SCREEN 0 and then back to 2 using SCREEN 2.

SOCIABLE GAMEPLAY

I already know that I can use AMOS's serial extension to program multiplayer games with two machines connected via a null modem cable, but is it possible to connect three or more machines and have them talk to each other via AMOS? If I can mange to do this, I may even write a networking system using AMOS!

Paul McDonald
London

Without extra hardware, I'm afraid the answer to this is: unfortunately, no.

The cheapest and possibly the easiest way to do this is to fit each machine with a low-cost MIDI interface (these can be picked up for as little as £20) and then include server code in your game which assigns an identification number to each machine so that your game (or networking program) can distinguish between the machines connected to the MIDI network. It's not an easy task, but it's about the only way that you'll be able to concurrently run a game on several machines.

AMOS FOR BEGINNERS

A new regular part of the AMOS column, AMOS for beginners aims to teach even the greenest beginner the fundamentals of programming in AMOS.

For the sake of time and valuable column space, we'll assume that you've already got an elementary understanding of the workings of the Basic language, enabling us to concentrate instead on the more impressive aspects of AMOS's very well endowed instruction set.

If your Basic isn't too hot, then now might be the time to pop down to your local book store and splash out on a good book on Basic. AMOS's Basic implementation is very similar indeed to AmigaBASIC (the rather flaky interpreter which Commodore used to supply with Amigas until Workbench 2.0 reared its wondrous head), so any good book on AmigaBASIC or Basic in general will do the job.

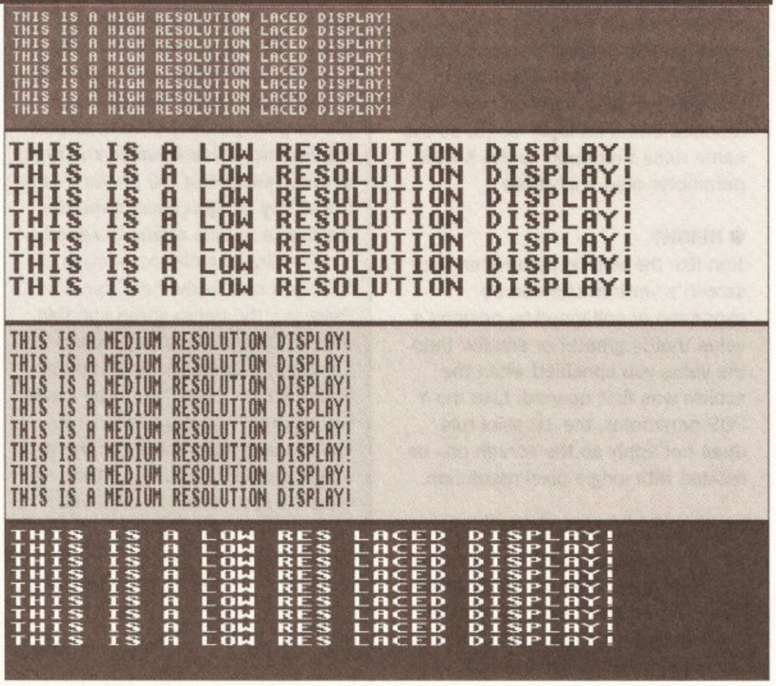
Over the coming months we'll be taking an almost embarassingly detailed look at the major aspects of AMOS – screens, scrolling, bobs and sprites, music, copper effects and AMAL etc – taking you step by step through the major instructions which will make things happen on your Amiga screen.

All this theory will be backed up by a healthy selection of demo programs which you can type in and modify to suit your individual requirements. After little more than a couple of months, you too will be churning out demos at a frightening rate.

SCREEN SCENE

As an Amiga user, you'll already be more than aware just how powerful the Amiga's display hardware really is. Machines such as the PC and the Mac need extra hardware to produce high resolution displays with lots of colours, but it's all there as standard on even the most basic Amiga. With AMOS, all this power is at your fingertips and with little more than a couple of fairly simple commands, you can set up and use these displays with ease.

What makes the displays which AMOS creates so special is that they are opened at hardware level, therefore ensuring that you have total control over them. What's more, because they are not tied in with the



Because AMOS does not run under Intuition (the Amiga's windowing interface), several screens with different resolutions and colour palettes can be opened within the same display

Amiga's rather slow operating system, they can be jiggled about and scrolled around with the speed that you'd normally associated with assembly language.

By default, AMOS automatically opens up a low resolution 320 by 200 pixel (NTSC resolution) 16-colour screen which is used unless you specify otherwise. For most programs though, you'll probably want to open and use your own displays.

The command which creates screens within AMOS is SCREEN OPEN. The format is as follows –

```
SCREEN OPEN
Screen Number,
Width, Height,
Number of Colours,
Mode
```

> **"As an Amiga user, you'll be aware just how powerful the Amiga's display hardware really is."**

Screen Open is used to create all displays within AMOS. When you open a screen, AMOS automatically allocates the correct amount of memory required to handle the screen and redirects your program so that all subsequent drawing, scrolling and bob operations are carried out on your new screen. First though, let's run through what each parameter does.

● SCREEN NUMBER
The screen number is a whole number between 0 and 7 which is used by AMOS to distiguish between multiple screens.

The default screen which AMOS creates is screen number 0. If you attempt to create a new screen with this same screen number, AMOS will close its default screen and reopen it using the parameters that you have specified.

● WIDTH
Width is a whole number that specifies the width of your screen in pixels. For low resolution and high resolution screens, this value would be 320 and 640 respectively, but you're not just restricted to these default values.

Thanks to AMOS's powerful screen scrolling facility, it's perfectly possible to create a screen which is much larger than what can be displayed on your monitor or TV. When you start to play around with hardware scrolling, this facility becomes very important indeed.

● HEIGHT
The Height parameter sets the height of your new screen in pixels. Once again, you're not just restricted to the standard PAL 256 and 512 (interlaced) pixel screen heights, although the Amiga will only ever be able to display any 256 or 512 lines at any one time.

● NUMBER OF COLOURS
As the name suggests, the number of colours parameter sets the number of colours which the screen will be capable of displaying. For low resolution displays, a screen can use a maximum of 4096 colours using HAM mode, but 32 colours is a more usable amount. Don't forget also that the more colours you allocate to the screen, the more memory the screen will use – this isn't too much of a problem these days, but don't forget when programming your masterpiece that there may still be users out there who have just 512K of RAM.

For medium and high resolution displays, the Amiga's hardware is only capable of displaying a maximum of sixteen colours on-screen at once, so low resolution is often a much better bet. Although sixteen colours may not seem a lot in memory terms, a high resolution 16-colour screen is the most memory intensive screen the Amiga is capable of displaying – a 640 by 512 screen with 16 colours will eat up a massive 128K of RAM. Open up several of these and you'll soon be out of memory!

● MODE
The mode parameter is used to tell AMOS which type of screen to open. It has three possible values – LOWRES, HIRES and LACED. LOWRES creates a non-interlaced low resolution display (320 pixels across) and HIRES creates a non-interlaced high resolution display (640 pixels across).

The LACED option must be used in conjunction with either LOWRES and HIGHRES and is used to double the amount of vertical lines that the screen uses using interlacing. This option, which is only available with later releases of AMOS, increases the vertical resolution but has the unavoidable side-effect of creating flicker which you may find annoying. To create a interlaced high resolution display, the mode parameter would therefore be specified as HIGHRES+LACED.

Now we know how to open a screen, we need to be able to use it and eventually close it. Closing a screen once it is open is very simple indeed

and is achieved by using the SCREEN CLOSE Screen Number command.

Once again, the Screen Number parameter is a number between 0 and 7 which points to a currently open screen. If you opened a screen and gave it a screen number of 5, you would therefore close the screen by entering the line SCREEN CLOSE 5. Simple really.

Once a screen has been opened, it can be positioned and even resized on your monitor or TV using the SCREEN DISPLAY Screen Number, X Pos, Y Pos, Width, Height command. Let's run through what each parameter does.

"AMOS can be made to compress and expand the horizontal length of your screen with some quite interesting results..."

● SCREEN NUMBER

Once again, this is just a pointer to the screen that you wish to manipulate. Read the section on the SCREEN OPEN command if you want to find out more.

● X POS

X POS is a value between 0 and 448 which dictates where your screen is to be positioned horizontally. In practice though, this range doesn't actually perform how it should. If you can, stick instead with values between 112 and 432. If you try to use values lower or higher than these, strange things can start to happen!

Another thing worth noting is that the Amiga automatically rounds these values up to the nearest multiple of 16, so even if you specify a value of something like 18, the screen's X position will still stay at 16. A stupid limitation, but one you can get around by using hardware scrolling (More on this later though!).

● Y POS

Just like the X POS, the Y POS parameter dictates the vertical position of screen. The range for this parameter is between 0 and 320. Note that the Y position of the screen doesn't have to conform to the X co-ordinate's silly 16 pixel limitation, so you're free to specify and value between 0 and 312.

● WIDTH

Now here's an interesting parameter that can be used to create some quite interesting results. By passing a WIDTH value which is greater or smaller than the WIDTH value you specified when you opened the screen, AMOS can be made to compress and expand the horizontal length of your screen.

The top left hand corner of the screen is taken as the origin, so the screen will expand or collapse from the right hand corner. Once again though, the value that you pass is rounded into a multiple of 16, so the same rules that apply to the X POS parameter also apply here.

● HEIGHT

Just like the WIDTH parameter, your screen's vertical size can be expanded or collapsed by passing a value that is greater or smaller than the value you specified when the screen was first opened. Like the Y POS parameter, the 16 pixel rule does not apply so the screen can be resized with single pixel resolution.

Right, that's enough theory – time to put all that we've learnt into practice.

The demo program listed below opens a low resolution 320 by 256 pixel screen which can then be moved around using a joystick plugged into port 2.

Don't worry too much about the joystick control commands – we'll be covering those in a future issue.

In the meantime though, just type it in, try it out and then have a go at adding an extra routine which continously collapses and expands the screen.

• Hint – you'll need to use the FOR...NEXT construct.

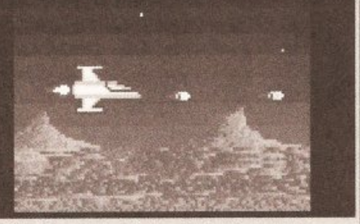
```
Screen Open
0,320,256,32,Lowres
Flash Off
'
X=112 : Y=0
Repeat
If Joy(1)=1 Then Y=Y-16
If Joy(1)=2 Then Y=Y+16
If Joy(1)=4 Then X=X-16
If Joy(1)=8 Then X=X+16
If X>432 Then X=432
If X<112 Then X=112
If Y>312 Then Y=312
If Y<0 Then Y=0
Wait Vbl
Screen Display 0,X,Y,,
Until Joy(1)=16
```

Next month we'll be taking a look at hardware scrolling and dual playfield displays.

I'll be showing you how you can smoothly scroll a screen under joystick control. This routine itself could be used as the basic for a horizontally scrolling shoot 'em up! See you then. AS

GAMES PROGRAMMING

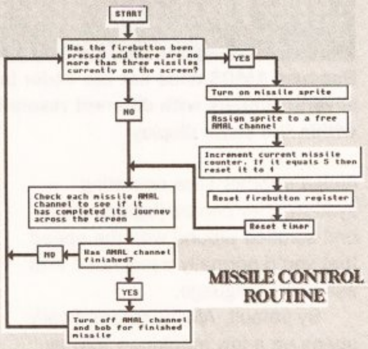
FIRE AND FORGET



With the missile code included in your game, you should now have a scrolling background complete with a spaceship that can fire missiles

With the two routines covered last month, our game is really starting to shape up. At the moment though, it doesn't actually do an awful lot – a space ship can be moved under joystick control across a scrolling background, but that's as far as things go. The next step is to add the routine which handles the firing of missiles, giving our player's ship the ability to fight back once the routine to handle aliens is added.

I originally stole the section of code you see below from *Xerve's Revenge*, the demo game bundled with AMOS. After playing around with it though, it soon became apparent that a few changes had to be made. For starters, *Xerve's* doesn't run AMAL under interrupt, therefore it was necessary to strip out the collision routine within the AMAL code, leaving this all collision detection to the main game loop. The way Peter Hickman's code handles



The missile control routine for our game in all its glory

the movement of the missiles across the screen was also a little flakey to say the least, so this had to be rewritten too to make it a little more efficient. With my changes in place, the routine is now pretty good (although still not perfect).

The heart of the routine is a section of code that keeps track of when the fire button has been pressed (the AMAL external variable RZ is set by the ship control routine when the fire button is pressed). If a bob is available (only four missiles can be fired at any one time), the routine then turns on a bob and assigns it to an AMAL channel. Once the AMAL channel has been allocated, the AMAL program FRE$(Bob Number) handles the task of moving the missile across the screen.

Although only four missiles can be fired by the player's ship at the moment, it's perfectly possible to extend this as much as you like. So far, the missiles use bobs number 1 through to 4, but you could extend this through to bob number 9 if you wanted. (Don't use bobs 10 through to 14 because I'll be using them in the next issue to handle the aliens!).

Once the missile has travelled across the screen, one of four AMAL external registers (RB through to RE depending on which bob was used) is set to 2 and a very simple routine then turns both the bob and its AMAL channel off, leaving it open for re-use. Once again, play around with it – if you come up with a better way of achieving the same ends, then why not share it with your fellow AMOS programmers by sending it in to me.

```
Rem **** AMAL Control Routine for ↵
Missiles ****
Dim FRE$(4)
For C=1 To 4
FRE$(C)=" Let R"+Chr$(65+C)+" = 1 "
FRE$(C)=FRE$(C)+" Let R0 = X - RA "
FRE$(C)=FRE$(C)+" For R1 = 1 To 20 "
FRE$(C)=FRE$(C)+" Let R2 = R1 * 18 "
FRE$(C)=FRE$(C)+" Let X = RA + ↵
R0 + R2 "
FRE$(C)=FRE$(C)+" Pause "
FRE$(C)=FRE$(C)+" Next R1 "
FRE$(C)=FRE$(C)+" D: Let ↵
R"+Chr$(65+C)+" = 2 "
Next C
Rem **** Section of code for ↵
initialisation routine ****
Timer=0
LAUNCH=1
Rem **** Code for main game loop ↵
****
If Amreg(25)=1 and Chanmv↵
(LAUNCH)=0 and Timer>5
Bob LAUNCH,X Bob(15)+18,Y ↵
Bob(15)+10,5
Amal LAUNCH,FRE$(LAUNCH)
Amal On LAUNCH
Add LAUNCH,1,1 To 4
Amreg(25)=0
Timer=0
End If
For C=1 To 4
If Amreg(C)=2
Amal Off C
Bob Off C
Amreg(C)=0
End If
Next C
```

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Visionary Vistas

Want to look at life through red and green tinted specs? Wilf Rees reveals the secrets of 3D – plus: tips on creating organic objects with DPaint

One of this month's educational tutorials has been influenced by the resurgence of the 3D craze. This appears to have been prompted by a breakfast cereal manufacturer which decided that among the assorted freebies, often inadvertantly covered with milk, was to be an unusual pair of glasses and a 3D Euro-Disney scene. So this month, to keep up with the times, I thought we'd have a go at creating 3D scenes with an Amiga. In addition, I'm starting a series of handy tips on achieving even more with *DPaint* – this time, looking at creating organic looking objects.

Apart from *Jaws the Revenge*, in which the 3D effects were silly, and advice in the *DigiView* manual on how to create 3D effects when digitising (which I could never seem to achieve!), there have been no really successful attempts to use 3D easily. The advert in the cereal packet passed as yet another example of a super effect wasted on a trivial advert.

FRENZIED AMIGAS

What did happen, however, is that a student happened to bring a pair of the glasses and the advert into school, another student began experimenting on an Amiga, and then, wow! 3D animations!!

As in most schools with a bundle of Amigas, there is always a collection of students hanging around the IT suite, and the effect of the 3D animation was like a feeding frenzy. The race was on to achieve the most impressive result, and impressive they were.

It really is not too difficult to get results, so I thought I would concentrate this month on showing you how to do it.

MORE THAN MEETS THE EYE

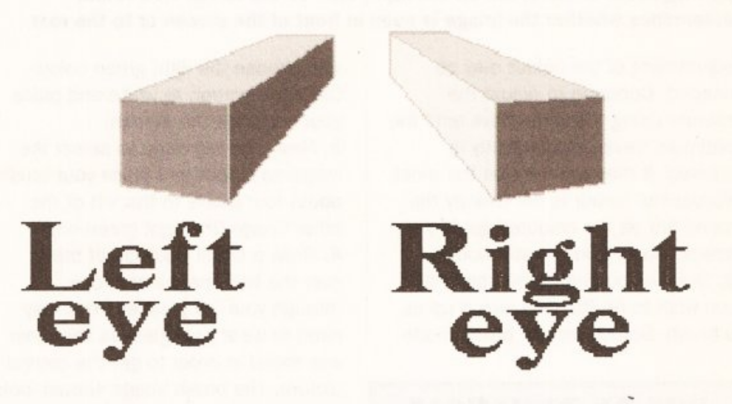
If you are are a fan of the aformentioned cereal, and you've kept hold of your glasses, then you have a head start. Don't worry if you are strictly a bacon and eggs type, 'cos help is at hand – making the glasses is not difficult. You will need some red and green acetate.

Stand in front of a mirror, holding a ruler, and measure the distance between the centres of your eyes. This might sound ridiculous, but believe me, we ended up with some 3D specs that were totally useless, simply because of a failure to measure. Any sort of card will do to make the frames. Once you get working on the project, you'll find it a good idea to make legs for the specs to keep two hands free, so incorporate them into your design.

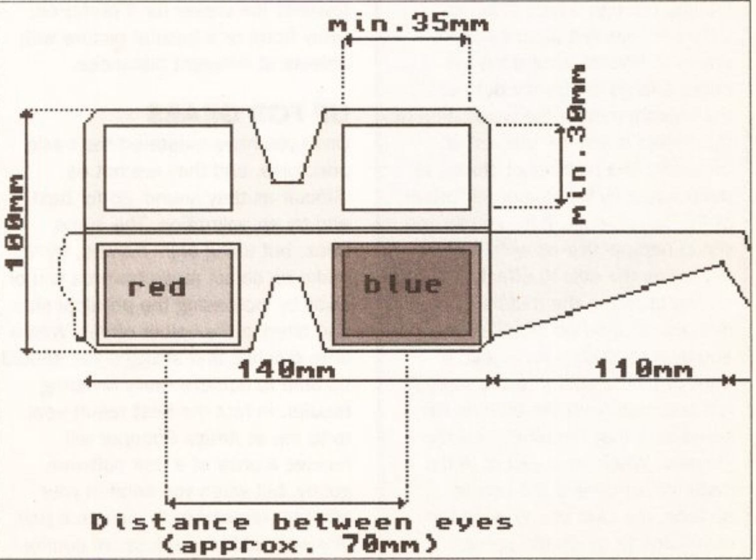
CREATING A 3D PICTURE

1. Load *DPaint*, selecting four colours, then select the palette requester. You need to have a white background and three other colours, light green and magenta. Place your 3D specs over your eyes and cover up the red lens. Everything should appear green. Then draw a few dots on the screen, in green (against the white background) the dots should appear invisible against the background while looking through the green lens, but black when looking through the red. If they don't, adjust the colours in the palette so that they do. Repeat this for the other lens, with a red colour being invisible against the white, but black when through the green lens. Again, some

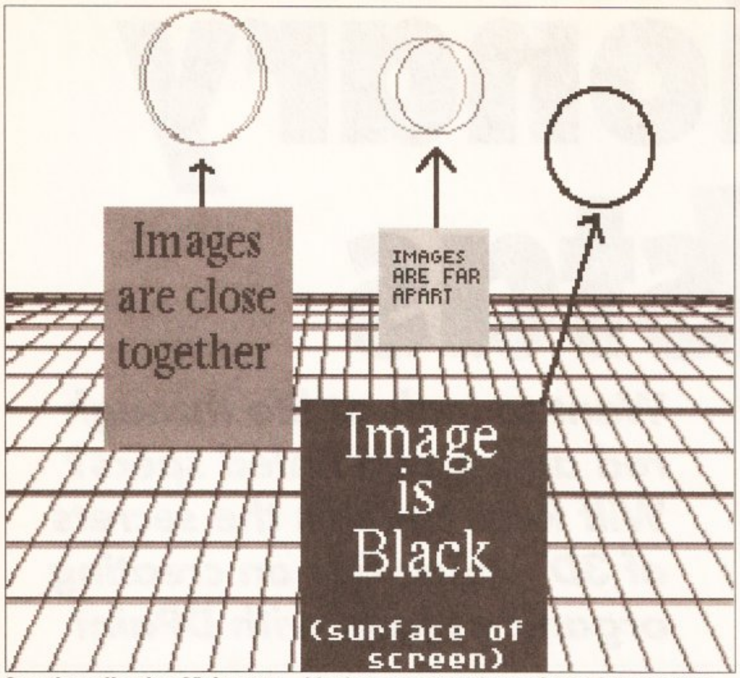
The same box viewed by both eyes, the pictures below show the images from each eye.



The secret of 3D viewing works on the same principle as that employed by our eyes, namely binocular vision. If you look at an object and alternately close one eye then the other, you will realise that the two views that you see from each eye are slightly different. This is apparent especially if you look at the object in the context of a background reference point. The brain takes these two separate images and merges them to create spatial distance, simultaneously using physical size to enhance the perception



Making a pair of 3D glasses – make sure you measure the distance between the centres of your eyes. The side of a cereal packet would do for the card



Creating effective 3D images – black represents the surface of the screen. The two colours created to represent each lens of your specs are offset differing amounts to represent the degree of spatial divergence. The placing of the colours, red on the right, blue on the left or vice versa, determines whether the image is seen in front of the screen or to the rear

adjustment of the colour may be needed. Continue to adjust the colours using the slider bars until the optimum 'reverse' invisibility is created. It may well be that the most successful colour is not exactly the same tint as the coloured gel in your specs. Don't worry, it still works.

2. Draw an outline of the object that you wish to be 3D, and pick it up as a brush. Select 'colour' brush mode and choose the light green colour. Clear the screen to white and place your brush on the screen.

3. Next, you will need to select the magenta colour and place your brush about four pixels to the left of the other image (the light green one.)

4. Draw a small squiggle of black over the two images and look through your 3D glasses. You may need to wear your glasses the other way round in order to get the correct picture. The brush image should look as if it is behind the black squiggle.

5. If you are successful with this, you may like to experiment a little more. You may realise, that the further apart the two brush-images get (light green and magenta), the more distant they look. You could create an animation of an object coming towards the viewer (or if preferred, away from) or a layered picture with objects at different distances.

UP FOR GRABS

Once you have mastered the basic principles, and they are not as difficult as they sound, go for bust and try an animation. The same rules, but using anim frames, try to make an object move towards you or away by increasing the physical size, and altering the colour offset. With a little practice and struggle you should be able to achieve really amazing results. In fact the best result sent to to me at *Amiga Shopper* will receive a prize of a free software goody, but when you send in your offering, remember to include a pair of your custom specs as, of course, it will only work with your own coloured gels. AS

THE 3D PRINCIPLE

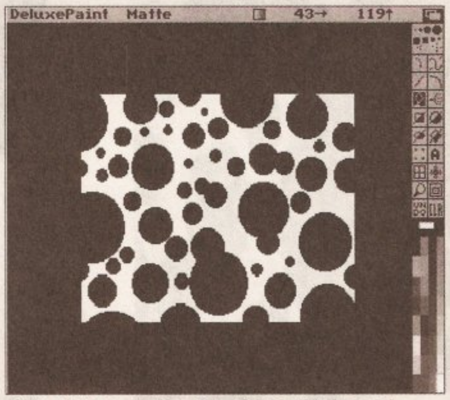
Objects appear in 3D according to the difference between the images seen by both eyes. While wearing the 3D glasses, the left eye sees only blue by looking through a red filter and the right eye sees red by looking through a blue filter, so different coloured pictures can be drawn to imitate what each eye sees. A large difference between the objects means the perception of the viewer is one of 'planes' of distance. The number of planes is determined by the degree of 'offset' of the two colours. It is best to use visual perspective as well, as this enhances the overall effect.

An object in the middle of your monitor is coloured black (or red and blue together). An object in front of this is split into two images, red and blue, with the blue on the same side that the blue is on the glasses. When an object is in the distance, or behind the screen surface, the blue image is on the other side to which the same coloured lens is on the glasses.

WHIZZO TRICKS WITH DPAINT 4

For those of you looking to stretch your *DPaint* skills, I am going to run through a series of exercises each month to help you get to know some of the more complicated tasks it will perform without too much difficulty.

This month I want to show you an exercise which combines using the ranges in conjunction with the wrap and gradient fill facility to create an organic image, the principles of which you can develop and incorporate into your own files to enhance your work's presentation. To create an organic-looking surface which could be used as part of a picture:



This picture shows the piece of 'cheese' created as you create black circles on your light-coloured rectangle

1. Load *DPaint*, selecting lo-res and 32 colours.

2. Using the palette tool, create a spread of colours, about 16 colours long, possibly from black to yellow.

3. With the range tool, create a range with all the colours in your spread.

4. Draw a filled rectangle, about 200 pixels wide and 150 high. Now draw black circles in this rectangle, to make it look roughly like a piece of cheese! (as illustrated in the screenshot)

5. From the fill type menu, select your range that you have just created and click on the gradient fill gadget.

6. Fill the "cheese" in with your spread of colours. The "cheese" should fill, showing the contour filling round the circular holes.

7. Pick this piece of cheese up as a brush and select colour mode (F2). Press "o" to add an outline of the same colour to the brush, and stamp it down on the spare screen. (j to toggle between spare and first screen).

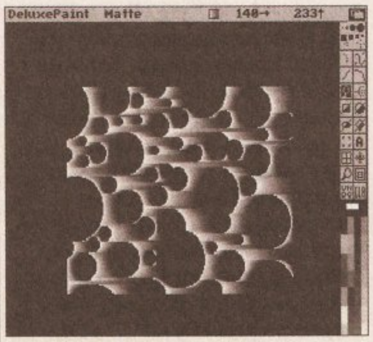
8. Using the range tool, reverse the direction of the range that you created in step 3.

9. Fill your outlined piece of cheese with this new range of colours (again the filling type should be contour filling (gradient).

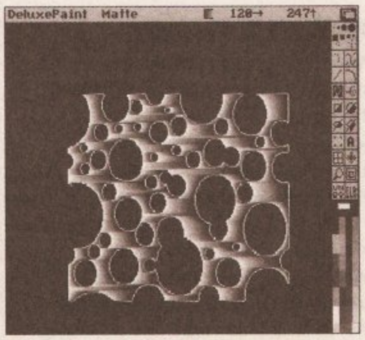
10. Jump back to the other screen and pick the other piece of cheese up as a brush.

11. Now stamp this brush on the other image on the spare screen (the one that you outlined) so that all the holes are perfectly lined up and you can see a one-pixel width circle of the image below.

12. Have a cup of coffee and admire your organic picture! Note: this picture can be saved as a brush and used in other pictures. You could even use the "wrap" function to physically wrap this brush around a shape to make the shape appear organic.



This is the first slice of 'cheese' after it is filled with your range, using the contour fill method



Here is the finished item, ready for you to use it in one of your organic pictures

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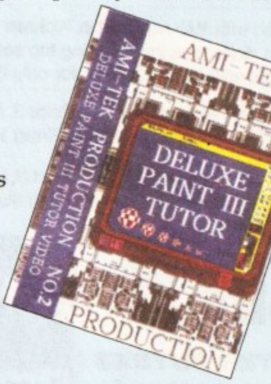
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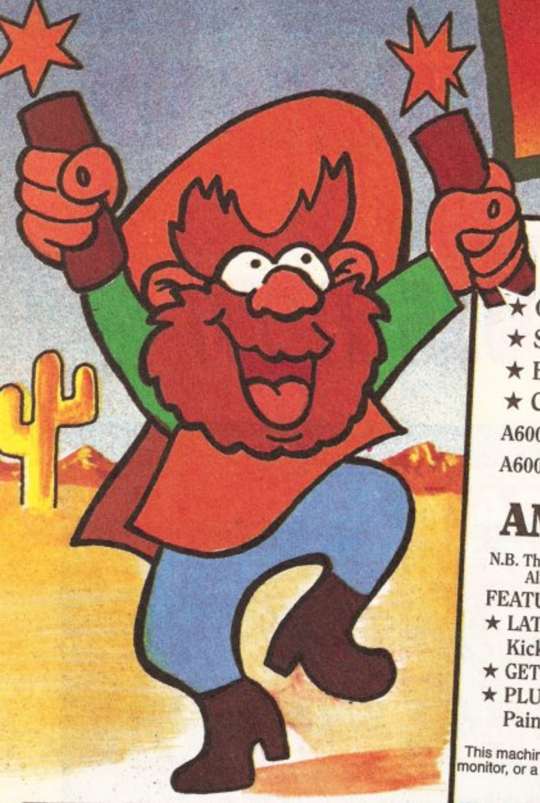
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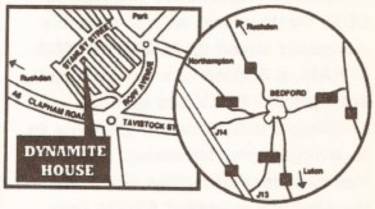
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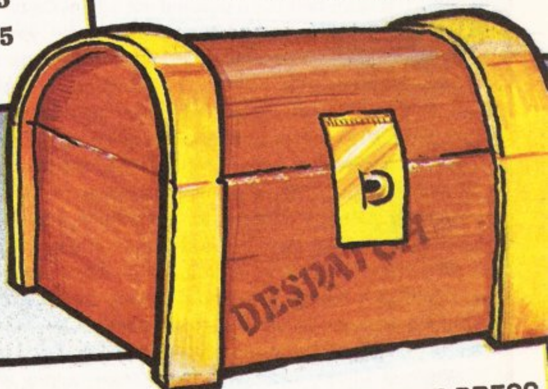
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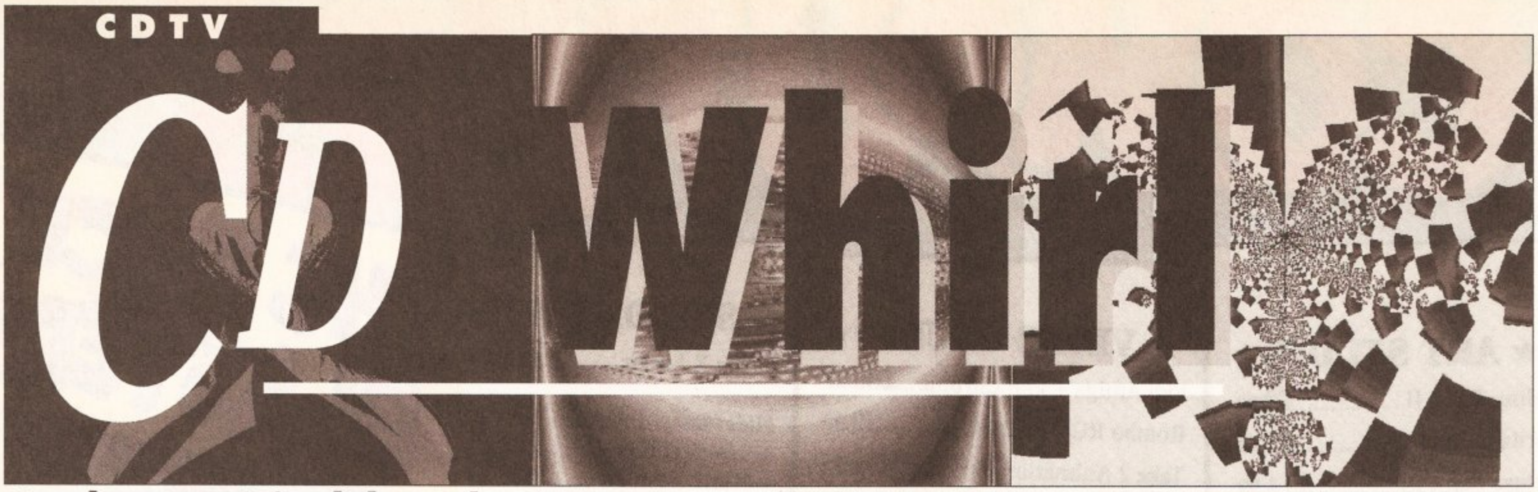
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* **N.B. This package is NOT Plus/A600 compatible**



CD Whirl

As the A570 is delayed yet again, Andy Storer wonders how much longer we have to wait for Amiga CD to become a reality...

Among the paraphernalia swamping Commodore's CDTV stand at our show last month, was a brochure outlining its multimedia product range. These are various flavours of A2000 and 3000 machines customised for developing multimedia titles. No pricing details as yet but some specifications raised a few eyebrows. The A2000 CDTV Devlopment; with switchable processor speed up to 25MHz, 5Mb of RAM, a 550Mb internal hard disk, and optional DCTV and genlock enabling 4 million colour graphics to be overlaid over full screen 50 frames a second motion video. Or the similarly specified A3000 Unix machine – this time with an optional 24/32-bit colour palette.

These weren't at the show, but the results of their labours were running on A570s hooked up to A500+s.

POETRY IN MOTION

Once again, Something Wonderful Is Happening on your Amiga and this time it's motion video. Commodore was showing off work in development by US-based Creotec, which included 10 second clips of 15 frames a second video running in quarter screen windows. What was surprising was both the quality of the images – which have to be pulled off the CD-ROM at only 150K a second – and the fact that the talking heads speaking to camera looked like their words were in sync with their lips. More and more CD titles will feature lip sync in this way and one already being readied for a summer release is *Sherlock Holmes: Consulting Detective* – an Icom Simulations game handled over here by Mindscape. You're probably wondering why I'm bothering to mention a game in *Shopper* – the point being that it features loads of motion video clips of real actors. Perhaps more revealing though is the fact that the title was developed on PCs and ported over to CDTV – a migration that can only bode well for the future of Amiga CD-ROM.

ELEMENTARY EVOLUTION

The PC has done a lot of catching up since the early days of 4.77MHz dinosaurs with crummy CGA graphics. With the new Multimedia (MPC) standard being touted by Microsoft, developers are looking at a market with an already established CD base. The *Sherlock Holmes* CD is a good example of the way the software's going. While I'm still not convinced of the quality of the on-screen video – it looks like single frame digitised shots linked together, rather than the kind of quality we've come to expect from even lowly VHS, it's about all we're going to get before add-on compression chips arrive for the CDTV and A570. These are already here but won't be affordable for another year or so. But that's not stopping people developing in the meantime and honing their multimedia skills. When the price of the chips – most likely those manufactured by C-Cube – comes down to consumer levels they'll just slot into the back of your CD-ROM drive and hey presto! – real multimedia will be here. Or something approaching it.

Meanwhile Commodore is still struggling to bring titles to the market fast enough. It reckons it sold 17,000 CDTVs in the UK in the first year – a figure it proclaims beats the number of Amigas sold in the first twelve months of its UK shelf-life. In the blurr of computing over the last seven years I can just about remember the early days of the Amiga and can faintly recollect the virtual absence of any 16-bit games available in 1985/86. It wasn't until 1988 when things began to pick up – when titles began to emerge which showed off exactly what the Amiga could do. And I guess it's the same with Amiga CD now. It's one of those chicken and egg situations – you need the software out there to sell the hardware but the software needs the hardware out there to make development worthwhile.

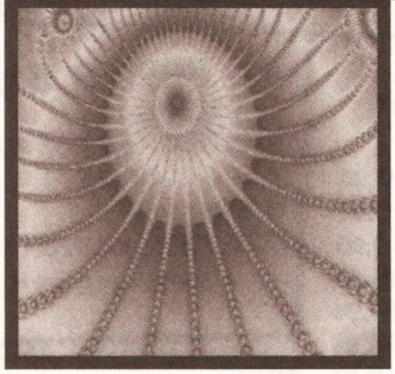
WHERE ARE THE TITLES?

So you end up where 'early adopters' buy a CDTV and find there's hardly anything they can run on it. Actually there's a 100 or so titles available but try and find any in the high street. Commodore aims to have CDTV titles available in the shops that currently sell audio compact disks, computer and video stores, hardware retailers etc – even bookshops. But at present all it can do is ask that you hassle your computer shop manager to get some copies in. Which he's hardly likely to do if demand is small. So what does Commodore need to do? Get a CD drive out on the streets fast! AS

FRACTUALITY

One of the more interesting CDTV titles up and running at the Amiga Shopper show was *Fractal Universe* by Almathera Systems. Besides providing users with information on the history of fractals, their differing forms and the maths used to create them, there's also a whole bunch of fractal generators for users to play around with 'til their art's content. *Fractal Universe* costs £29.95 and is avaialble on 081 683 6418.

All of the images shown on this page are examples of the amazing results easily achieved using the fractal generators.



WHITHER THE A570?

A major disappointment at the show was that there were actually no A570s on sale. The drive has been delayed yet again. Commodore claims it'll be another month – I reckon autumn at the earliest. Even now the price is not clear. While £269 was the intended price it may now rise to £329. Of course bundled discounts will be available through mail order, but it seems that sales of the A570 are crucial to the success of CDTV in the general market place. For it'll be games that lead the way and in the run up to Christmas there'll be a whole load of new releases on the shelves. And it's only once A570 units begin to sell to existing Amiga owners that more interesting productivity titles, as opposed to reference works, will begin to emerge. The sort of thing I'm talking about is the kind of titles which are already out for the PC – DTP applications, font libraries, clip photography, music software and samples, paint packages with clip art, that sort of useful stuff. Who wants a bunch of obscure US encyclopaedias and reference works? We just want to get busy and the quicker the drive's out the better.

Which is all very well and makes sense as long as there's an A570 in the pipeline. Latest news is that there might not be! Or rather, there is a drive but it won't be called the A570 anymore, it'll sell for £399 and have seriously significant enhancements. What these might be is anyone's guess. At present Commodore is staying schtumm! I'm writing this right on deadline so you'll have to wait until next month for the real picture. Sorry about that... but stay tuned.

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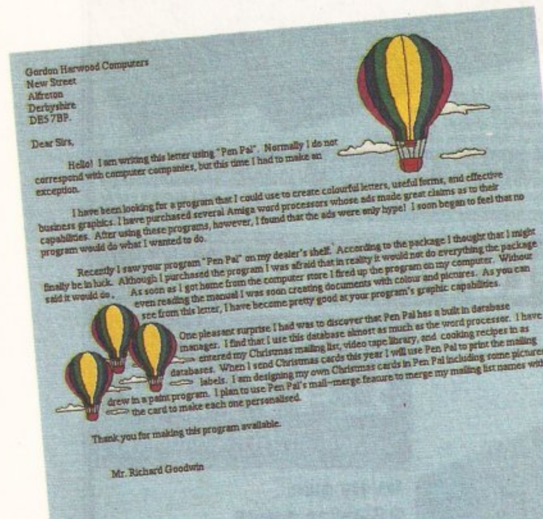
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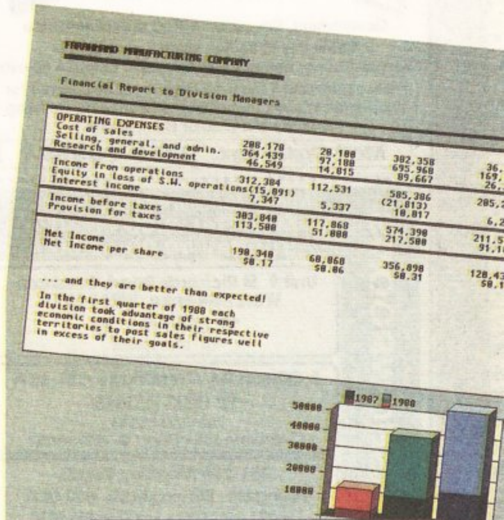
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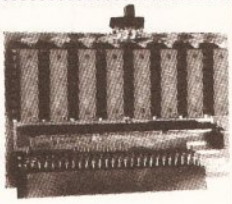
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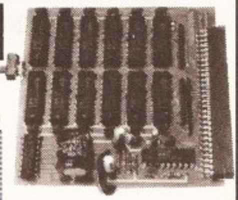


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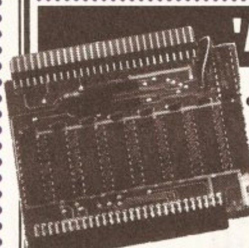
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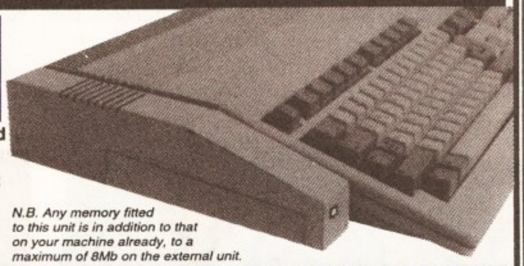
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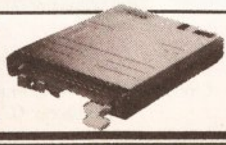


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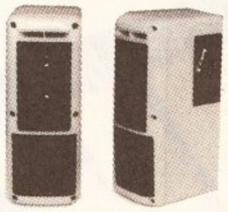


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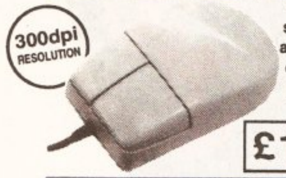


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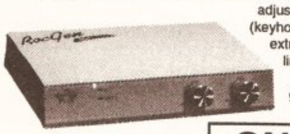


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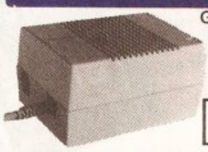
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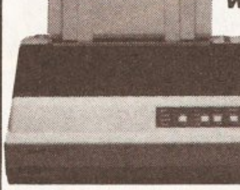
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Well if you do then you can't afford not to catch the July issue of **Amiga Format** replete with **Spectracolor Jr** (worth a stunning £60), the complete HAM paint program from Oxxi Aegis, giving you the power to use all of the Amiga's 4,096 colours at once.

We'll also show you the way to be creative, even if you lack the raw talent, and get the results you want in art, design and music the easy way... by cheating. But there's more than one way to get 15 minutes of fame 'cos on our second Coverdisk is a demo of Europress' **Easy AMOS**, the program that gives you the chance to write your very Amiga games. Get a life and get a copy.

Cracking the Shell

In the third part of his guide to writing your own database, Mark Smiddy adds the all-important View, Add and Delete modules...

Welcome back to the AmigaDOS column and without further ado, let's get back to the database which we started in issue 13. At this point you will still be adding and deleting records using the ED command. While this is fine for the most part, it is a little prone to error. Let's jump straight in to the action.

As promised, Listing 1 is the AddData module which will enable you to add one or more records directly from the command prompt. AddData works rather like the FindData module in that you can execute the command followed by a data string:

```
Command: A Mark Smiddy, ↵
Amiga Shopper, CIX - SMIDOID
Add another y/N?
```

or just execute it on its own, like this.

```
Command: A

Add another y/N? Y

Mark Smiddy, Amiga Shopper, ↵
CIX - SMIDOID
Add another y/N
```

Note in the second case, AddData asks if you want to add something before you actually do; this is quite normal.

HOW IT WORKS: AddData

1. Defines a long key with lots of parameters – as you may recall, this allows for long interactive command lines.

In this case, it allows you to enter 12 "words" without having to resort to quotes.

2. Collects the contents of <a1>...<ac> into a variable called data.

3. Checks to see if any data has been entered – it can come from the initial command line or interactively from this segment.

If data has been supplied control jumps to Step 5; otherwise it continues at Step 4.

4. Transfers control immediately to the end of the script (Step 20 actually). Since no data has been supplied, the script must be executed again in order to gather some.

5. Closes the IF...ENDIF construct opened at Step 3.

6. Tests for the presence of a temporary file in T: (the temporary files assignment). It's called "Temp" in this example, but any name would do – provided you stick to the same one throughout the script. If the file exists, control passes to Step 7; otherwise it jumps to Step 8.

7. The new record (the contents of the variable "Data") are appended (added) to the temporary file here. By appending each new entry, the file contains the new records – before they are added to the main database.

It is important to note, the temporary file is created by this module and removed by the main Database script.

You can see how T:temp is removed by referring to the description of Steps 8-10 on pages 121 and 122 of *Amiga Shopper* Issue 13.

8. If control reaches here from Step 7, it branches to Step 10; otherwise it continues at Step 9.

9. Creates the temporary data file "T:temp" and adds the current record to it. T:Temp is only valid while this program is running, see the description of Step 7 for more details.

10. Closes the IF...ELSE...ENDIF construct opened at Step 6.

11. Prints the prompt "Add another y/N" and pauses for user interaction. (It waits for you to enter something.)

Note the ASK command sets the WARN flag if you enter Y and clears it otherwise.

12. Tests for the WARN condition. If you enter, Y at Step 8, control resumes at Step 13; anything else causes a branch to Step 14.

13. Transfers control to Step 20 where the script will start again.

You may notice, this label is also used by Step 4 to achieve the same effect.

14. Control can only arrive here from Step 12 (Step 13 is an unconditional branch) and it continues directly at Step 15 because Y was *not* entered.

15. This line has the effect of displaying a short message (which is split over two lines by the use of *n) just to keep the user informed.

LISTING 1 • LISTING 1 • LISTING 1

ADDDATA

```
1.  .key a1,a2,a3,a4,a5,a6,a7,a8,a9,aa,ab,ac,data/k
2.  .def data "<a1> <a2> <a3> <a4> <a5> <a6> <a7> <a8> ↵
    <a9> <aa> <ab> <ac>"
3.  if "<data>" EQ ""
4.  skip AddOne
5.  endif
6.  if exists T:temp
7.  echo >>T:temp "<data>"
8.  else
9.  echo > T:temp "<data>"
10. endif
11. ask "*nAdd another y/N"
12. if warn
13. skip AddOne
14. else
15. echo "Adding new records*nPlease wait..."
16. join T:Temp S:Data AS T:tempdata
17. copy T:TempData S:Data
18. execute S:database
19. endif
20. LAB AddOne
21. echo "data: " noline
```

16. Adds the new records to the start of the data file using the JOIN command.

The AS keyword is used here to keep the syntax clear. Note the new file is also stored in T: because it isn't legal to write to a file you are reading from.

You may wonder at this stage why the records are kept in a temporary file. The reason is twofold. First, since T: is in RAM, a temporary list is faster to update than it would be if the write went directly to disk every time. Second, this also offers the chance to insert a "Get out" clause; such as "Are you sure?". This is demonstrated in the DelBlock module described below but not incorporated here.

17. Replaces the existing database with the one just created at Step 16. This command can fail if the disk is full and in this case, you should copy the complete database from RAM to a disk with enough room. As an exercise you might like to devise a fix for this eventuality.

18. The module completes here and calls the main program again.

19. Closes the IF...ELSE...ENDIF construct opened at Step 12.

20. This marks the restart point called at Steps 4 and 13.

21. Displays the entry prompt without a line feed — to give the illusion of an interactive prompt.

22. Calls the AddData module recursively in its interactive mode. Redirection to NIL: (>NIL) is used to suppress the messy command line.

DELETING RECORDS

The DelBlock module is used to remove specific records from the database and can be accessed from the command line in one of two ways.

For instance, to delete record number three you would enter:

```
Command: D 3
3  Fred Bloggs, 1 The ↵
Marketplace, Newton Abbott
Delete records?
```

However, you can delete a range of records by specifying the start and ending record numbers, as you can see below:

```
Command: D 2 4
2  Amiga Shopper, Future ↵
Publishing, BATH, Avon
3  Fred Bloggs, 1 The ↵
Marketplace, Newton Abbott
4  Dave Smith, Behind the ↵
Bike Sheds.
Delete records?
```

If you do not supply either value, DelBlock will prompt you for them automatically.

LISTING 2 • LISTING 2 • LISTING 2

DELBLOCK

```
1.  .key start,number
2.  .def number 1
3.  .def start SKIP
4.  .bra {
5.  .ket }
6.  if "{start}" EQ "SKIP"
7.  skip restart
8.  endif
9.  eval {number} - {start} to ENV:ThisMany lformat "%n"
10. eval >NIL: <env:ThisMany op=+ value2=1 to T:Tmp ↵
    lformat "%n" ?
11. copy T:Tmp to ENV:ThisMany
12. if >NIL: <ENV:ThisMany VAL NOT GT 1 ?
13. setenv ThisMany 1
14. endif
15. failat 11
16. echo >T:DelMac1 "{start}n;p;"
17. echo >T:DelMac2 "(?;n;)*nSTOP"
18. join T:DelMac1 ENV:ThisMany T:DelMac2 AS T:DelMac
19. edit s:Data with T:DelMac ver=T:DelRec
20. if error
21. echo "Record(s) not found"
22. SKIP ReRun
23. else
24. echo "*e[33m"
25. type T:DelRec
26. echo "*e[31m"
27. endif
28. Ask "*nDelete record(s) y/N?"
29. if warn
30. echo "Removing Records from: {start} to {number} ↵
    *nPlease wait..."
31. echo >T:DelMac1 "{start}n;p;"
32. echo >T:DelMac2 "d"
33. join T:DelMac1 ENV:ThisMany T:DelMac2 AS T:DelMac
34. edit s:data to T:DelData with T:DelMac
35. copy T:DelData to S:Data
36. endif
37. LAB ReRun
38. execute s:database
39. LAB restart
40. echo "Delete record #: " noline
41. execute >NIL: s:DelBlock ?
```

HOW IT WORKS: DelBlock

1. This module only takes two parameters: START, the record number to be deleted; and NUMBER and optional parameter which will be the last record to be deleted.

2. This defaults the NUMBER variable to 1 if no value is supplied.

3. Similarly, if a starting record number is not supplied, this variable is initialised to the string SKIP.

4-5. Redefine < and > as { and }.

6. Test the start variable to see if some number was supplied. (A test is made for a string supplied as a default value at Step 3 to make the meaning clearer.) If the test passes, control continues at Step 7; otherwise it jumps to Step 8.

7. Control arrives here if no values were supplied and is sent directly to the re-start code, beginning at Step 39.

8. Close the IF...ENDIF construct opened at 6. (Control arrives here if a START value was supplied.)

9. Calculates how many records (lines actually) are going to be removed from the database and stores the result in the environmental variable "ThisMany". Note an LFORMAT string is used to suppress the LF character.

10. Adds 1 to the value ThisMany

AMIGADOS UPDATE WARNING

Rumours are circulating about yet another version of Workbench – version 2.1 no less. Since this is the AmigaDOS column, let me put the record straight with some official comment from Commodore.

Workbench 2.1 is unlikely to arrive in the UK before the end of 1992 and does not offer any significant enhancements for the UK market. What's more important is this: pirate copies, complete with Kickstart 2.1, are already doing the rounds. I know how tempting it is, but you should not use any Workbench unless it has been supplied by Commodore. Here are another few reasons why you should stick with official copies:

1. Using a copy of 2.1 is illegal (but has that ever stopped anyone?)

2. Workbench 2.1 is full of bugs. It's a developer-only release and as such still suffers from pre-release niggles. Some versions can eat your hard disk.

3. It carries a nasty virus. Some illegitimate copies of Workbench and the SuperKickstart carry a new breed of virus. The Superkickstart one is most interesting because it doesn't spread to other disks — it just destroys them at random. This can include any AmigaDOS device including smart cards. You have been warned.

JARGON BUSTING • JARGON BUSTING

Database – A collection of one or more records.

Flat file – A simple type of database where every item of information must be stored in each record.

Empty field – A field which doesn't contain any data. It is common to use empty fields in databases where optional data notes can be entered.

and stores it in a temporary variable. Note that interactive mode must be used for this example because one of the values is being retrieved from a file. This must be done to retain downward compatibility with AmigaDOS 1.3

11. Copies the temporary variable back to the proper variable.

12. Test if the value "ThisMany" is not less than or equal to zero. ("VAL NOT GT" is akin to BASIC's <=.) If it is less than 1, control continues at Step 13.

Note: Interactive mode is used again here because the value is being retrieved from a file.

13. Negative or zero values are not allowed for this value, so this line resets ThisMany to its lowest possible value.

14. Closes the IF...ENDIF construct opened at Step 12.

15. Raises the fail level slightly to prevent minor complaints from EDIT stopping the script in its tracks.

16. This is where it starts to get a little frightening – so to make things a little simpler, let's assume some values. Set START as 5 and THISMANY as 4. Using these values, this line creates a file containing:

```
5n;p;
```

and saves that as DelMac1

17. Similarly, this creates DelMac2 which looks like this:

```
(?;n;)
STOP
```

18. Now the module joins the two macro segments to the environmental variable and the macro takes shape like this:

```
5n;p;
4(?;n;)
STOP
```

Translation:

```
5n        Go down five lines
p         Move back one line
4(?;n;)   Display this line then move
          to the next one (four times)
STOP      Quit and return to the caller.
```

This example also illustrates why it was necessary to suppress the line feed in "ThisMany".

Otherwise, the macro would read as follows:

```
5n;p;
4
(?;n;)
STOP
```

which is a subtle error and not easy to trace; pretty hairy stuff too, as I said.

19. Uses the EDIT macro on the database and creates a temporary file (T:DelRec) which contains a list of the records about to be deleted. The story does not end there though...

20. ...because, if the record(s) were not found, EDIT returns with an ERROR condition – remember Step 15. This is tested for here, and if found control resumes at Step 21; otherwise it branches to Step 23.

21. Displays the error message...

22. ...and jumps to the code at Step 37.

23. Control only gets here from Step 20 when the requested records are found. It continues at Step 24...

24. ...which changes the text colour to the highlight...

25. ...displays the list of records marked for the chop...

26. ...and switches the highlight off again.

27. Closes the IF...ELSE...ENDIF opened at Step 20.

28. Pauses the script and gives the user a last chance to decide whether or not to delete the records.

29. Tests for the WARN condition – returned by ASK if "Y" is entered. If WARN is found control continues at Step 30; otherwise it jumps to Step 36.

30. Displays an information message. The start and end numbers are filled in when the script runs of course.

31. We've already met something like this before – at Step 16. This creates the same edit macro once more (although the original would probably do just as well). Assuming the previous values, DelMac1 reads:

```
5n;p;
```

32. DelMac2 is simpler though, this just adds a single letter.

```
d
```

33. Creates a new version of DelMac which now looks like this:

```
5n;p;
4d
```

This finds the first line (records) we are interested in and deletes that and the next three...

34. ...here as temporary file...

35. ...which replaces the original database here.

36. Closes the IF...ENDIF construct opened at Step 29.

37. Marks the skip point which is used by the error handler.

Note, when EXECUTE is called, the failure level is reset back to 10 (crash on ERROR). This line is ignored if execution reaches here normally from Step 36.

38. Calls the main database module.

39. Marks the skip point called when the user has not entered any values – see Steps 6-7.

40. Displays the single line prompt...

41. ...and executes the module in interactive mode so the values can be retrieved correctly.

VIEWING RECORDS

By way of relieving the tension, I have included the listing of the ViewData module in this month's feature – even though there is insufficient room to explain how it works here this time. As you'll see the basic syntax is in fact very similar to DelBlock (explained above) and as such it works in a similar manner.

COMING NEXT MONTH

In next month's Cracking the Shell I'll be demonstrating how to create a complete perpetual calendar and explaining just how the ViewData listing works. AS

LISTING 3 • LISTING 3 • LISTING 3

VIEWBLOCK

```
1.  .key start,number
2.  .def number 1
3.  .def start SKIP
4.  .bra {
5.  .ket }
6.  if "{start}" EQ "SKIP"
7.  skip restart
8.  endif
9.  eval {number} - {start} to ENV:ThisMany lformat "%n"
10. eval >NIL: <env:ThisMany op=+ value2=1 to T:Tmp ↵
    lformat "%n" ?
11. copy T:Tmp to ENV:ThisMany
12. if >NIL: <ENV:ThisMany VAL NOT GT 1 ?
13. setenv ThisMany 1
14. endif
15. failat 11
16. echo >T:DelMac1 "{start}n;p;"
17. echo >T:DelMac2 "(?;n;)*nSTOP"
18. join T:DelMac1 ENV:ThisMany T:DelMac2 AS T:DelMac
19. edit s:Data with T:DelMac ver=T:DelRec
20. if error
21. echo "Record(s) not found"
22. SKIP ReRun
23. else
24. echo "*e[33m"
25. type T:DelRec
26. echo "*e[31m"
27. endif
28. LAB ReRun
29. execute s:database
30. LAB restart
31. echo "View record #: " noline
32. execute >NIL: s:ViewBlock ?
```

GOTTA PROBLEM?

If you get stuck with AmigaDOS or there is anything specific you would like to see covered here, drop a line detailing your conundrum to: Mark Smiddy, Amiga Shopper, 30 Monmouth St, BATH, BA1 2BW. Sorry, no personal correspondence can be entered into. You can EMail me on CIX @ "SMIDOID".

Find your local group

1520 Plotter Group (ICPUG) ☎ John Bentley 06286 65932.

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Amiga Users' Klub, Windsor House, 19 Castle St, Bodmin, Cornwall PL31 2DX. Meets every Friday from 6.30-9pm, to expand members' knowledge of Amiga and to help solve people's problems. Contact Jack Talling.

Amiga Users Group - FYLDE Advice on Amiga, technical support, discussions, workshops, tuition . £10 year, £6 6 months. Contact A Wilkinson, 25 Glen Eldon Rd, Lytham St Annes, Lancs ☎ 0253 724607.

If your group isn't mentioned, fill in the form at the bottom of the page to let us know about you

Amiga Video Producers' Group Meets quarterly in Swindon. For info pack send SAE to J Strutton, 8 Rochford Cl, Grange Park, Swindon, Wilts SN5 6AB ☎ 0793 870667.

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Champion PD Club PD at 30p, newsletters, advice, help and more. Membership £10. Contact: Steve Pickett, 31 Somerset Close, Catterick, N Yorkshire, DL9 3HE.

Chester-le-Street 16-Bit Computer Club Ground floor function suite, The Civic Centre, Newcastle Rd, Chester-le-Street. Club meets Mondays from 7.30-9.30pm. Exchange advice and swap tips. Contact Peter Mears ☎ 091-385 2939.

CDTV Users Club Swap views on software and hardware. Contact Julian Lavanini, 113 Fouracres Rd, Newall Green, Manchester M23 8ES.

Chic Computer Club Full details with an SAE to STAMP, Chic Computer Club, PO Box 121, Gerrards Cross, Bucks. Contact Steve Winter ☎ 0753 884473.

Club Amiga Membership £10 a year for PD software and a 24-hr helpline service (091-385 2627). For more info send SAE to Chris Longley, 5 Bowes Lea, Shiney Row, Houghton Le Spring, Tyne and Wear.

Club Futura Advice to programmers and beginners. Send SAE for info to G Holland, 16 Hermiston, Monkseaton, Whtiley Bay, Tyne & Wear NE25 9AN

Comp-U-Pal Australian group for users in the outback. Newsletter, helpline, PD library. Membership A$24. Comp-U-Pal, c/o MDA, PO Box 29, Knoxfield 3180, Victoria, Australia.

Computer Club 16 Laton Rd, Hastings, East Sussex ☎ 0424 421480. A 16-bit club dedicated to being computer enthusiasts Membership costs £15 per year.

Disabled Group (ICPUG) Contact David Bate, 71 Bedford Rd, Bootle, Merseyside L20 7DN.

Edinburgh Amiga Group Membership £5, includes free advice and PD. Contact Neil McRea, 37 Kingsknowe Road North, Edinburgh EH14 2DE with SAE.

Guru Masters PD, demos etc, contact the Sheriff, 111 Sherbourne Rd, Banbury, Wolverhampton, WV10 9EU ☎ 0902 782277

Hereford Amiga Group Membership free, help, exchange of PD and shareware. Lotus Turbo 2 Quad Player Championship. Contact John Macdonald, Alma Cottage, Allensmore, Hereford HR2 9AT ☎ 0981 21414

In Touch Amiga Penpals, contacts, PD, swaps £2.50/year. Contact P Allen, 0342 835530, PO Box 21, Lingfield, Surrey RH7 6YJ

Independent Commodore Products Users' Group Biggin Hill Library, Church Rd, Biggin Hill, Kent. Meets most Thursdays from 7.45-9.45pm. Lectures and open nights. ☎ John Bickerstaff after 8.30pm 081-651 5436. Also national network of user groups. Contact individual groups for details on activities, cost, meeetings etc:
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Jam Bit Tech 24-hr hotline, PD library For info contact J Maron, Greycourt, Greycourt Cl, Idle, Bradford, BD10 8QH W Yorks ☎ 0274 611111 Ex 248

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Northern Ireland Amiga User Newsletter, free PD library. Send SAE for further info. £5 annual membership. Contact: S Hamer, 98 Crebilly Rd, Ballymena, Co Antrim BT42 4DS

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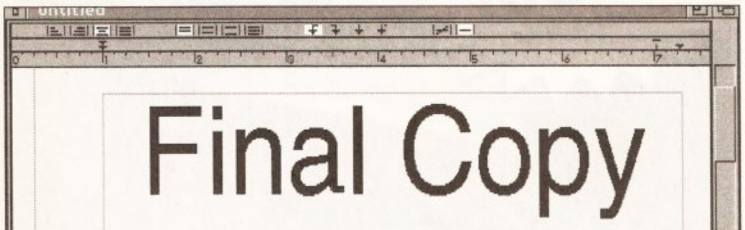
Processing Power

Final Copy is Softwood's long awaited follow-up to Pen Pal, Mark Smiddy takes a closer look and wonders if it was worth the wait...

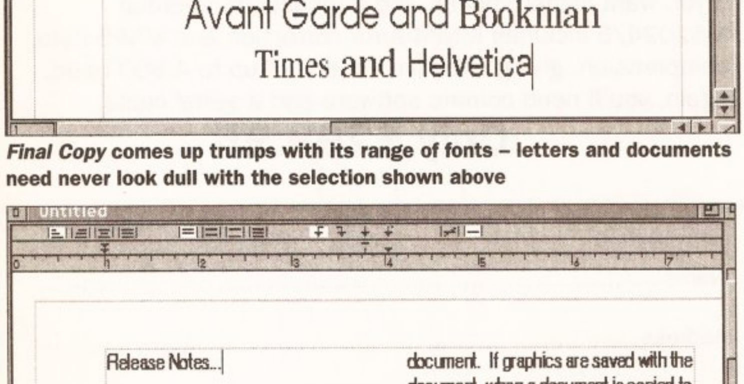
Many Amiga users would be loath to do without *Pen Pal*. It has a friendly user interface, extensive graphics facilities – even a built-in database; what more could you ask for? It fits into that awkward limbo between true word processing and desktop publishing – but it is far from perfect. Enter *Final Copy*, and before going any farther, let's get one thing clear – *Final Copy* is not a re-badged *Pen Pal*. The new program is re-built from the ground up with many of the old features relegated and replaced with tools you need. With that in mind, this review will compare *Final Copy* to its main competitor, *Wordworth* and not the original *Pen Pal*.

For openers the new program boasts a full British English spelling checker based on the Collins-Proximity system; plus thesaurus and hyphenation dictionary from the same stable. What's so amazing about that? Take a misspelt word like, "newmonia". My hideously expensive Macintosh system – equipped with the latest *Microsoft Word 5* couldn't even manage a suggestion; *Final Copy* responds almost instantly and correctly with "Pneumonia". The Collins-Proximity system is widely regarded as the best around and can be seen in other packages such as *Protext*, *Wordworth* and even desktop personal spellers like the Franklin Spellmaster.

Still not impressed? Well consider this: *Final Copy* is supplied with a range of Postscript lookalike fonts which can be scaled up beyond 300 points (over four inches) and printed on any graphic printer without losing quality; and they look good on screen too! It may not be Postscript but it is an improvement over the quirky range of fonts supplied with the standard machine. Better still, you won't need Workbench 2 to use them either.



Final Copy comes up trumps with its range of fonts – letters and documents need never look dull with the selection shown above



With its variety of fonts and the capability to produce multiple columns, _Final Copy_ is ideal for newsletters, posters and fanzines

UNDER STARTERS ORDERS

But what does *Final Copy* offer new users? Well, in order to use this program you'll need a minimum of two disk drives (preferably three) and at least 1Mb of memory; or put another way, a basic Amiga A500 configured for serious use or a standard A1500.

It goes almost without saying, *Final Copy* runs considerably better from a hard disk – not only does that remove the tedious disk swapping but it also affords easier access to the *Final Copy* Postscript fonts. Hard disk installation is fast and painless thanks to a well written installation program that requires virtually no user intervention save for swapping disks. Starting the program from floppy requires quite a bit of disk juggling – less if you follow the suggested scheme in the manual!

When it is first started, *Final Copy* requests which type of screen you require – Workbench, Custom or interlaced. An interesting feature which I turned off straight away – at least this is an option. Once that's over with it's down to some writing: and the first and possibly, the only major cavil with *Final Copy* – the default screen font is dreadful.

Softwood calls it Softserif, it's a bit like Times and, being a serif font, it's about as clear as mud on the Amiga's screen – even with a monitor. On printed material, large blocks of text are almost always printed in serif fonts, but the limited resolution afforded by colour monitors – VDUs in general come to that – means a sans-serif font is much more readable. Searching through the barrage of fonts on one of the disks I finally rested with "H", a version of the sans-serif, Helvetica medium. In itself, this takes time because *Final Copy* does not have a font preview feature (à la *Wordworth*) so every font must be tried out live in the document.

FONTOGRAPHY

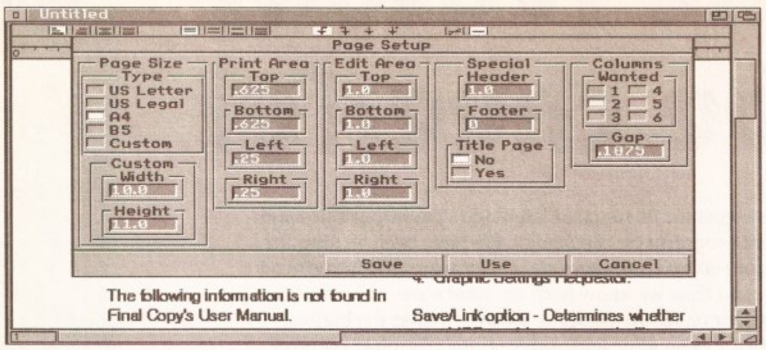
It was more or less at this point I was getting ready to burn the box and take out a law suit against Softwood for eye-strain; but a quick bash at printing couldn't do any harm and would certainly ease the migraine. Manufacturers are prone to make a lot of extravagant claims about their products, and Softwood is no exception. So, as I clicked Final on the print menu, little cynical phrases started to buzz round the synapses.

But, wait! Hold the front page! One look at the output – even in 12 point Helvetica on a clapped out 9-pin Epson – convinced me to look a bit deeper. Those exotic claims about fewer jaggies are true – *Final Copy* really does deliver. Outline fonts are the latest innovation being incorporated into Workbench 2 – but even then, you only get three and none of the current packages can exploit them. Yet, here is a program which comes with ten fonts of its own in varying weights and styles; plus it only requires Workbench 1.3! Better still, these fonts can be scaled to any size and look as good on screen (at sizes beyond 24 points) as they do on a printer.

CONTROLLING COPY

Typographic control in *Final Copy* is limited to just leading and font width adjustment. Leading is normally automatic, although body copy leading can be set directly in one point steps from 8 to 16 points. Larger font sizes are supported by manual control. Kerning (inter-character spacing) is not supported, replaced by a curious method of stretching or compressing the

continued on page 134



***Final Copy*'s page setup menu – there's a variety of options here to make your document look more professional**

BEGINNERS **BEGINNERS START HERE** **BEGINNERS**

What is a word processor?
In short, a word processor is a software tool used for the creation of documents; and this usually implies documents created and output to a simple text printer. A word processor will allow you to create and alter text, usually check spelling and occasionally offer extra tools for checking grammar etc. Typical word processors include: *Scribble*, *Transwrite* (also called *Transcript*) and the heavy hitter, *Protext 5*.

So what's DTP then?
Desktop publishing, while usually limited in terms of text creation, allows a much finer degree of control over the layout of the final document. Take a close look at the editorial pages in this magazine. They are created with a desktop publishing package and contain many elements which are difficult or impossible to produce with conventional word processors: graphics columns; drop capitals; white-on-black ('wobs') to name but four. Typical Amiga DTP packages include *Professional Page* and *PageStream*.

And word publishers?
Word publishers, also known as document processors, fill the gap between true word processors and desktop publishing systems by combining the most commonly used facilities of each in one easy-to-use bundle. At least, that's the theory anyway. Examples of word publishers in this vein range from the dreadful *Kindwords* to the very powerful such as *Wordworth*.

What's the advantage of Postscript?
Postscript is a page description language devised by Adobe systems. In essence, Postscript is a programming language much like BASIC or C, but it is rarely written or edited by humans – although that is possible. Applications write Postscript programs that are read by an interpreter built into the printer and this is used to produce the final page. (Technically speaking, Postscript is more closely related to FORTH because it uses postfix – reverse polish – notation for speed.) Additionally Postscript fonts are based on outline technology which gives them device independent resolution.

Typically, Postscript is only found on LASER or LED printers because the entire page is prepared in memory first and then written on the page. If you want to use Postscript on a conventional impact printer, it has to be interpreted by another program (such as Saxonscript) and printed as a graphic dump – it's rather like printing graphics from *DPaint*. Postscript capability allows you to produce draft copies using low-cost printers then get super-high quality output from a typesetting bureau.

What are tracking and kerning?
These are advanced facilities used to adjust the finite amount of space between two letters (kerning) and the space between a group of letters (tracking). Kerning is a subtle technique used to pull two letters together and improve the appearance of the final output. Tracking is like kerning, but it's used to adjust spacing across words; you could use tracking to make a headline fit neatly across the full width of a page. See Figures 1 and 2.

continued from page 132

characters themselves. Although this does afford good control for headlines it is useless for proper kerning.

One caution should be borne in mind, the print resolution and density are largely dependent on the printer – so you will get far superior results on a 24-pin engine than on a 9-pin machine. Also, unlike *Wordworth*, *Final Copy* does not support true multiple-pass printing except where this is required by the driver. Confused? Don't worry, this just means that the printer overprints each dot two or three times. In effect, *Final Copy* will always give better looking results with a new ribbon, *Wordworth* will have the advantage of smaller sizes and worn ribbons.

ON THE RIGHT TRACK

Given this mass of features it seems strange to reflect that *Final Copy* does not feature proper tracking and kerning.

Tracking can be simulated by adjusting the font width and used carefully, this can give better results; but lack of kerning is a mistake.

Before leaving the subject of fonts, it's worth mentioning that *Final Copy* includes versions of the best standard fonts around such as the extremely readable Century Schoolbook and the informal script font Zapf Chancery. Moreover, these are available in specially designed oblique (slanted) and bold versions. This offers a distinct improvement over the normal (horrid) method of algorithmically altering the font.

> **"In many respects, Final Copy is similar to the outstanding Microsoft Word."**

LAYOUT LIMITATION

Layout control in *Final Copy* is surprisingly limited. Although it does support up to six columns it does not allow facing pages. This is a serious limitation to anyone producing double sided artwork – even something as simple as a double-sided, single fold flyer. Similarly, although page guides can be turned on, the column guides are never shown. More surprisingly, there is no option to show "invisibles" – the control characters such as tabs and paragraph markers.

GRAPHICS CAPABILITIES

Next to everything else, graphics handling is something many people think essential in a word publisher; and it's interesting to note how many times contoured word flow is viewed as an essential prerequisite.

First of all, I will say, *Final Copy* does perform everything you might expect – but how often are such features used? In practical terms, the only place where contoured text comes into its own is children's story books! Come to that, this is precisely the sort of application *Final Copy* would be very good at. Hooked up to a colour Postscript printer, *Final Copy* would make a very good addition to any classroom.

CROP AND SCALE

At a more technical level, *Final Copy* can crop and scale graphics – nothing too surprising there – and supports ILBMs up to 8 planes in depth.

A more useful feature was first introduced with *Pen Pal*, in that graphics are linked with the document – not saved with it. Therefore a *Final Copy* document could, theoretically, contain dozens of pictures and never run out of memory. This facility has the side effect that if the original file is changed, the version in the document changes too. That, at least, is the theory – in practice version 1.1 has a bug which causes things to go a little haywire – and the graphic gets loaded as text! It's a real shame this does not work correctly, because the possibilities for business reporting in particular are wide reaching.

Another bug also means graphics are displayed in screen colours no matter what the preferences setting says. Attention to curing both these should be given high priority at Softwood – (got that Woody?).

RELIABILITY

Before closing, one last point must be considered: how reliable is *Final Copy*? This is especially important considering *Pen Pal*'s poor track record in this respect. *Final Copy* turns out to be considerably more stable than *Pen Pal* ever was – but it isn't perfect. Running from hard disk, it tends to be quite stable but occasionally forgot it was running on a low-resolution screen.

Running from floppy disks can be more troublesome: backing out of a disk swap caused trouble more than once. Even so, these problems are minor compared to some systems I have used.

FINAL COPY

Even with its inherent fondness to guru, *Pen Pal* used to be my favourite "fun" Amiga word publisher, with *Wordworth* being the ultimate document engine. However, in some

To kern

To kern

Figure 1: Kerning is used to bring characters closer together. Here 'T' and 'o' are shown before (above) and after (below)

0 Tracking

+ Tracking

– Tracking

Figure 2: Tracking in action. The effect is just like kerning all the characters together by the same amount

respects *Wordworth* is so slow on Kickstart 1.3 it can be almost unusable at times. *Pen Pal* had the speed but lacked the power and reliability. *Final Copy* suffers from neither of these problems and as such has supplanted its competition in one fell swoop.

FINAL COPY, COPY CAT?

In many respects, *Final Copy* is similar in many respects to the outstanding *Microsoft Word*, and although lacking a lot of the facilities, features like columns and graphics handling work better in *Final Copy*. It's fast enough even on 1.3 machines, memory efficient and very easy to use.

Output quality is first rate – on screen and printer and outline fonts ensure good results are possible even on ancient dot-matrix machines such as the Epson FX-80.

The user interface has the look and feel of Workbench 2, with 3D buttons complemented nicely by the professional stone-grey colour scheme. Oddly enough though, the user has no control over the palette and although I found this no hardship, some might feel it a disadvantage.

Editing facilities such as extended selection are simple and very slick.

Block selection and tab positioning are also very fast when compared to *Wordworth*'s sluggish approach – making *Final Copy* more expert friendly too.

The wide variety of fonts supplied, multiple columns and excellent graphic support make this package the first choice for many applications from posters to newsletters to full fanzines.

SUMMING UP

There are a lot more features I would like to see – proper text frames and better column support. And please, can we have a mail merge facility? In the meantime, I will await Digita's reply in the form of an updated *Wordworth* with interest, in the meantime despite its flaws, *Final Copy* gets my vote. AS

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Final Copy..............................tba
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FROM SOFTWOOD INC

The version previewed here and all 1.xx versions of Final Copy now on sale in the UK are not intended for sale outside the US. These versions do not have the British-English speller or thesaurus. Final Copy II – available this summer – will have many extra features including drawing tools, style sheets, improved screen character rendering; plus the promised Collins-Proximity speller.

The new version will be clearly marked as a UK release and will be supplied and supported by our UK distributor, Gordon Harwood Computers. To get full technical support and the most up to date version, we recommend waiting until it arrives; it will be worth it. Existing Pen Pal UK users returning their registration cards to Harwoods will be offered a low-cost upgrade to Final Copy II.

FINAL COPY 1.1 V WORDWORTH 1.1

	Final Copy 1.1	Wordworth 1.1
EDITING		
Reduced view	25/50/75%	No
Enlarged view	200/400%	No
Undo last command	No	Yes
Again (repeat last command)	No	Yes
Select all	Yes	Yes
Headers and footers	Yes	Yes
Insert time	Yes	Yes
Insert date	Yes	Yes
Update time and date	Yes	Yes
Page numbers	Yes	Yes
Glossary	No	Yes
Macros	ARexx	Glossary
LAYOUT		
Horizontal ruler	Yes	Yes
Vertical ruler	No	Yes
Snaking columns	Yes. 2-6	No
Facing pages	No	Yes
Show page breaks	Yes	Yes
Show invisibles	No	Yes
Show page guides	Yes	Yes
GRAPHICS		
Display colours	4	2 to 16
Colours printed	4096	16
Scale	Yes	Yes
Crop	Yes	Yes
Edit graphic	No	No
Degrade during scaling	No	Yes
Flow text	Yes	Yes
Adjustable standoff	Yes	Yes
Wrap in columns	Yes	No
Borders	H.line/Q12pt	No
Cool link to file	Yes	No
Save with file	Yes	Yes
PRINTING		
Preview	No	Yes
Use printer fonts	No	Yes
Mix graphics and printer fonts	No	Yes
Postscript	Yes	Yes
Print sideways Postscript	Yes	Yes
FONTS		
Use outline fonts	Yes WB1.3+	Yes (WB 2.04)
Use Amiga fonts	No	Yes
Max font size	>300 pts	Font specific
Track and kerning	No	Limited
Adjust font width	Yes	No
Adjust leading	Yes	Yes
Style sheets	Limited	Limited
Font preview	No	Yes
Number of fonts supplied	10	4
GENERAL		
ARexx support	Yes	No
Speech	No	Yes
Drives required	2 floppies	1 floppy
Hyphenation	Yes	Yes
Memory required	1Mb	1Mb
On-line help	No	Yes
Spelling checker	UK	UK
Thesaurus	UK	UK
Word counter	Yes	Yes
User definable palette	No	Yes
Screen clock	No	Yes
Screen saver	No	Yes

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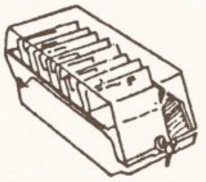
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10 Top shopping tips for buying a word processor

We tell you the ten essential things to look out for when choosing a prose producer

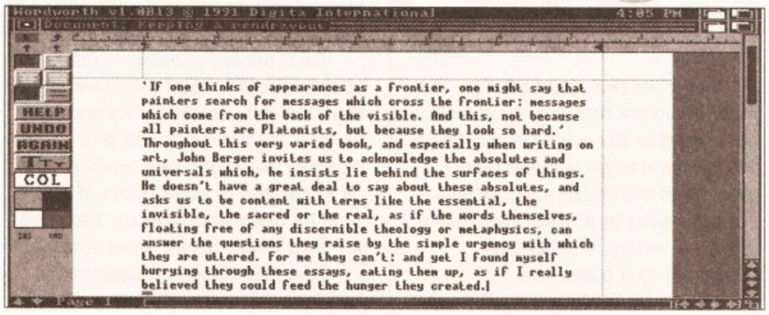
A word processor is probably one of the most sought after Amiga applications. Just about everyone has a need to write. It may be nothing more than personal notes, or letters to the bank manager. But it may be you have ambitions as a professional writer, or that you have to compile attractive-looking business reports.

The costs and facilities of word processors vary considerably. It's therefore important to have a clear idea of your needs, and of what the various packages supply, before parting with your cash. Here's ten pointers to bear in mind:

❶ Graphics – Not all word processors support graphics, and of those that do, some offer better facilities than others. Before investing in a word processor with graphics facilities, decide whether you really need them. Remember that the primary purpose of a word processor is to help you write. If graphics are important to your work, you may be better off with desktop publishing, which will give you far better control over graphical output.

❷ Control codes – These are layout instructions which are sent to the printer. They do things such as change fonts, sizes, switches from bold to italic and so on. If your printer is fairly basic, with only one or two fonts, then control codes aren't that important, but if it has lots of fonts built-in for you to play with, then you'll want a word processor which enables you to send control codes to it to make use of them. If you need to send control codes, be sure that the package you have in mind supports them – most don't.

❸ Proportional fonts – These consist of letters which are of different widths, such as the 'i' and 'w' in this text. The standard Amiga font is not proportional – all letters take up the same space on the screen. Some word processors will enable you to use proportional fonts on-screen, and send these to your printer. However, these tend to be slower – updating a screen containing a proportional font is a much more complex process than one with an ordinary bitmapped font. Whether you need this facility depends on how professional you want your output to look. Again, if the quality of your documents is really important, it might be an idea to look at a system comprising of a basic word processor and a DTP package. None of the word processors currently available will support a printer's built-in proportional fonts.



***Wordworth*, from Digita is one of the more fully-featured (and consequently expensive) word processors in the Amiga market. But do you need all it offers?**

❹ Number of documents – If you're doing nothing more than writing letters, you're unlikely to need more than one document open at a time. If, however, you are involved in creative writing, the facility to cut text from one document and paste into another can be invaluable. Just about every word processor will enable you to have more than one document open at once, but different packages set different limits on how many can be open. Available memory will often be a limiting factor. Bear in mind that programs which make use of colour and graphics in documents will use much more memory for each opened document as well as running progressively more slowly. Being able to type faster than a word processor can display is a real irritation.

❺ Spelling checker – All but the cheapest word processors come with spelling checkers. A spelling checker is a pretty useful utility, but it should never be relied upon one hundred percent to correct your text. Also, don't forget that word processors from American manufacturers will have American dictionaries, in which many words will be spelt 'incorrectly'.

Some of the better word processors have several dictionaries against which they can check your work. With these programs, text will be checked against a dictionary of commonly used words before a larger (and therefore slower) dictionary is consulted. This is useful if you have large documents to check.

Another thing to look out for is the facility to create more than one user dictionary (in which you can enter your own words, unrecognised by the computer's dictionary). Having more than one user dictionary means you can store sets of esoteric words relating to different subjects.

If you intend to create large documents, another good facility is the ability of the spelling checker to go through the whole document before querying any words. That way, you don't have to wait for requester after requester to appear as the checker churns through your text and all the instances of the same word mis-spelled several times throughout the text will be corrected with only one entry from the user.

❻ Thesaurus – Not many packages include a thesaurus, but then again not many people need one. Computer thesauruses tend to be pale shadows of their bookish counterparts. Don't let the inclusion of a thesaurus in a package sway you overmuch in its favour.

❼ Columns – Some packages enable you to format your text in several columns across the page, which can be handy for producing newsletters and the like. However, if you intend to make a great deal of use of this facility, and you require a good deal of flexibility in the formatting of your text, again you might be better advised to look at a DTP package. The multi-column facilities of word processors are OK, but basic. One thing to look out for is the ability to insert column breaks in your text, giving you greater freedom in deciding which text goes where.

❽ Contents – The ability of a word processor to form a list of contents or an index based on user-selected words can be a boon when producing a report or technical documentation.

❾ Headers and footers – These are short sections of text that get printed at the top and bottom of every page. They are useful for just about anything beyond simple letters. Look out for the facility to use different headers and footers for left and right-handed pages.

❿ Mail merge – This is the ability of a word processor to take name and address information from a database and place it in a document. This is handy if you intend to use your word processor for business and will be writing a lot of standard letters (those in which the main text is the same for each recipient). Look out for the facility to choose names and addresses from the database according to user-specified sort criteria (only sending letters to people in London, for instance). AS

Programming for all

Cliff Ramshaw dispels a few more myths about the difficulties of programming for beginners. This month sees the continuing evolution of a noughts and crosses game created in Basic

As promised last month, we now move on to the nitty gritty of writing a noughts and crosses program. Although this may seem like a dreadfully complex problem, it can be broken down into a number of small and easily digestible chunks. The ability to carry out this sort of analysis is one of the first skills a programmer acquires.

Last month I explained how an important part of the program was the section which displayed the board. The board itself, as you may remember, is stored in a two-dimensional array called BOARD. The section of code introduced set the board up to be initially empty by filling the array with zeros. The values -1 and 1 were taken to represent crosses and noughts respectively. It's easier to deal with words rather than numbers, so it would be better to assign these values to variables:

```
EMPTY=0
CROSS=-1
NOUGHT=1
```

The values of the variables will not be changed throughout the program: the only advantage to using them is that the code will be easier to read and understand.

VISUAL STIMULUS

Several different approaches may be taken to display the board on the screen. The one I'm going to show you is fairly basic, sufficient to demonstrate the principles – you can always write something more ambitious if you so wish. Every time a move is made, the board changes, and so it needs to be re-drawn. The first step then is to clear the screen so as to avoid clutter. This is done in AMOS with the Cls command.

Then, we want to put some co-ordinates on the screen, relating to the positions on the board, to enable the player to select a move. Here's the code to do it:

```
Cls
Print "  1 2 3"
Print
Print "1"
Print
Print "2"
Print
Print "3"
```

There are two spaces before the numbers in the first Print statement, ensuring that the writing is inset from the left-hand edge of the screen. Also, all of the horizontal numbers are separated by a blank space; and all of the vertical numbers are separated by a blank line.

After that, the board itself must be drawn. It is made up of a series of lines, each plotted with, in the case of AMOS, the Draw command. Here's how:

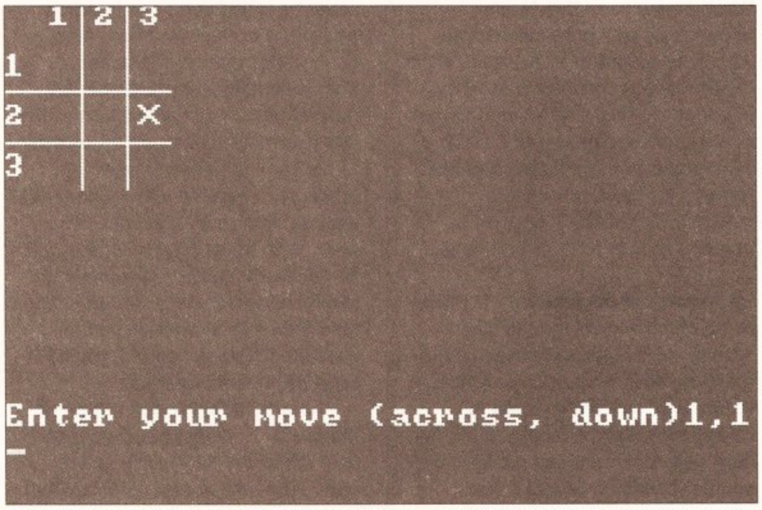
```
Draw 28,0 To 28,59
Draw 44,0 To 44,59
Draw 0,28 To 59,28
Draw 0,44 To 59,44
```

The Draw command takes two pairs of co-ordinates. The first pair – made up of a position across the screen, a comma and a position down the screen – designates the point at which the line should start. The second pair designates the end of the line.

Each printed character in the standard font is eight pixels wide and high. We will use simple Xs and Os to mark the moves. So, in this example, each of these symbols will be separated by eight pixels of space from its nearest neighbour. The lines we have drawn bisect these spaces.

Now that the board itself has been drawn, we need to draw the moves that have been made so far. This is simply a matter of checking through each of the elements of the BOARD array in turn, and printing either an X, an O or nothing, depending on their contents. The easiest way to carry out this checking and subsequent printing is to use two For/Next loops:

```
For X=1 To 3
   For Y=1 To 3
        Locate X*2,Y*2
        If BOARD(X,Y)=CROSS
Then Print "X"
        If BOARD(X,Y)=NOUGHT
Then Print "O"
     Next Y
Next X
```



Do noughts and crosses make you cross? Well, the tried and tested strategy at *Amiga Shopper* is to grab the centre every time – you just can't lose

Well, the If statements should be straightforward by now. Furthermore, you can now see the advantage of using variable names rather than numerical values for determining the contents of the board. The only strange looking bit is that Locate statement. What does that do?

THE WAY TO GO

Locate is a handy little extension to printing supplied by AMOS. Most Basics have something similar – check your manual for details. It tells the computer where to place on screen the next thing to be printed. The first number is the position across the screen, the second is the position down. Unfortunately, the co-ordinate system used is not the same as that used with the Draw and related commands – this refers to character positions, with (0,0) representing the screen's top left. Because each character is eight pixels by eight pixels in size, a value of 1 in the Locate statement corresponds to a value of 8 in the Draw statement.

Thanks to the way the grid's dimensions have been chosen, each of the positions in the array can be translated to screen positions simply by multiplying the co-ordinates of the array by two. Hence that peculiar looking Locate statement. Programming graphics, even the most simple graphics, often involves these sort of fiddly calculations. It's not complex programming as such, simply a matter of getting to grips with the dimensions of the screen and the idiosyncrasies of the graphics commands supplied in the language you are using.

PLAYER OF GAMES

Now that we've got the board working, the next step is to get some input from the player. Before going on though, it's as well to divide all of the previous code off as a procedure (see the panel for an explanation of this). There are no parameters to be passed to it, but the procedure (which we'll call DISPLAY) needs to have access to the BOARD array, as well as the variables CROSS,

NOUGHT and EMPTY. These are therefore mentioned in a Shared statement immediately after the beginning of the procedure. In the case of BOARD, it must be followed by a pair of braces to inform the computer that it is an array:

```
Procedure DISPLAY
Shared
BOARD(),CROSS,NOUGHT,EMPTY
```

Getting a move from the player consists of two main tasks: physically retrieving the input, and checking that it is a valid move.

The board has been labelled with a three by three co-ordinate system, so the easiest way to represent a move is by two numbers corresponding to the required position. This can be dealt with using an Input statement:

```
Procedure PMOVE
Shared
BOARD(),CROSS,NOUGHT,EMPTY
Locate 0,16
Print "Enter your move
(across, down)";X,Y
BOARD(X,Y)=CROSS
End Proc
```

Note the use of the Locate statement to make sure the text is printed well away from the board. Also note that informing the computer of the player's move is done simply by setting the required element of BOARD to the value of CROSS. Simplicity itself!

What we really need is some sort of error checking: firstly, that the co-ordinates are within the bounds of 1 to 3; and secondly that the square where the player wants to place a cross is empty. Here's one way of doing it:

```
Procedure PMOVE
Shared
BOARD(),CROSS,NOUGHT,EMPTY
GOOD=0
Repeat
Locate 30,16
Print "         "
Locate 0,16
Input "Enter your move
(across, down)";X,Y
If(X>=1) and(X<=3) and(Y>=1)
and(Y<=3) Then If
BOARD(X,Y)=EMPTY Then GOOD=1
Until GOOD=1
BOARD(X,Y)=CROSS
End Proc
```

There are a couple of interesting points about this method. The first is that the variable GOOD is used as a 'flag'. It is initially 0, and is set to 1 if the player has entered a valid move – the variable 'flags' the event of a valid move being entered. It can then be used as the controlling variable for a Repeat... Until loop, which goes round and round until GOOD has been set to 1.

Because it may take the player more than one attempt to enter a valid move, it is necessary to erase from the screen any previous input. This is done with the first Locate command and the printing of a few spaces.

The long convoluted If statement is the bit which actually checks the validity of the entered move.

Firstly, the If statement checks to see if the two variables are within the allowed bounds: they must lie between 1 and 3; if they don't, there is no point going any further. If they do, then the next check is made: to see if the square the player wants to move on is empty. If this and the previous condition is met, then the move is OK and GOOD can be set to 1. The loop will then end, and the relevant element of BOARD will be updated.

Note that BOARD is only checked for an empty square after X and Y have been found to be within the required bounds. If it were done otherwise, an error might result: if, for example, X had value of 11, which is beyond the size of the BOARD array, then attempting to look at this non-existent element would cause a (non-fatal) crash.

This procedure and the one to draw the board can be linked with a controlling section of code to create a prototype of the game so far:

```
Do
DISPLAY
PMOVE
Loop
```

This piece of code must be preceded with the code printed last month to dimension the BOARD array and fill it with empty spaces. Once this is done, you will be able to enter crosses on the board to your heart's content.

That's all for now. Next time we'll take a look at getting the computer to play a game. AS

STANDARD PROCEDURE

Once programs get beyond a certain size, it's a good idea to break them down into smaller parts, if only for peace of mind. It's easier that way to keep track of each section, checking that it works before moving on to the next. Furthermore, it is easier when thinking in terms of fine detail to be able to do so with small segments. Then, when contemplating the program as a whole, you need not be concerned with how each part works, but only with the basic functions it performs and how it interacts with the other parts.

Basic offers a way of implementing this compartmentalisation by means of the procedure. A procedure is named, in much the same way as a variable, and consists of a section of code. If that name is mentioned in any other part of the program, the computer goes off to execute the code within the procedure. Once execution is complete, the program continues after the point where it came across the procedure's name. It's like using Goto statements. But consider this:

```
POS=1
Print "This is the beginning"
Goto FRED
HERE:
POS=2
Print "This is the middle"
Goto FRED
THERE:
Print "This is the end"
Stop
FRED:
Print "This is Fred"
If POS=1 Then Goto HERE
Goto THERE
```

What a mess! The difficulty arises because the 'procedure' Fred is being called from two separate places in the main program. In order for the computer to know where to jump to after the Fred procedure has done its thing, a variable (POS) has to be used to keep track of where Fred was called from (jumping to a procedure is frequently referred to as 'calling a procedure'). Furthermore, a total of three labels have to be used, and the profusion of Goto statements makes things look decidedly complicated.

Consider the alternative:

```
Print "This is the beginning"
FRED
Print "This is the middle"
FRED
Print "This is the end"
Stop
Procedure FRED
Print "This is Fred"
End Proc
```

All of the Gotos have been done away with, as has the variable POS and the labels. A procedure is marked by the statement Procedure, followed by the procedure's name. Then comes the code that makes up the procedure, followed by the statement End Proc. When a procedure is called, the computer automatically remembers where it was called from, so that execution can continue from there once the procedure has finished.

Procedures handle variables in a slightly different way. All of the variables used inside a procedure are said to be local to it: they cannot be accessed by the rest of the program. Likewise, the procedure cannot access any of the variables in the rest of the program, unless these variables are explicitly described as being 'Shared' between the program and the procedure. This helps to prevent 'side-effects', where the procedure modifies values external to itself without the programmer's intention – these kind of bugs can be very hard to find.

As well as being able to share external variables, procedures can also be passed variables. The difference here is that only the values of the variables are so passed – these values can be referred to by different variable names inside the procedure itself, and any modifications made to these variables will not modify the values held in the variables external to the procedure and which were passed to it. To see this, try the following:

```
A=1
B=1
Print "A at start";A
Print "B at start";B
FRED [A]
Print "A at end";A
Print "B at end";B
Stop
Procedure Fred [A]
Shared B
A=A+1
Print "A in Proc";A
Print "B in Proc";B
End Proc
```

Note that variables are passed to a procedure in AMOS by enclosing them in square braces (some other Basics use ordinary curved braces). These variables are known as the procedure's 'parameters'. There must be the same number of parameters in the procedure definition and in the line of code which calls the procedure.

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JX100 colour scanner, scanner driver s/w Art Dept Pro cost £800, sell £600. CVP 68030 combo 22 MHz cost £599 sell £495. Brother M1109 9-Pin printer £50. After 6pm (0633) 880889.

Panasonic KX-P1123 24 Pin Mono printer with cable for sale £150 – 2 months old mint condition – sale required to allow upgrade to colour printer – unit boxed with manuals – George Aldridge ☎ 0908 370582.

Amiga 2000 dual drive, 5 months guarantee, hardly used £395 ono. Citizen 120D printer £65. Publishers choice software £18 or everything for £445. All boxes and manuals included. ☎ 0582 761418.

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1.5Mb memory expansion £60, Datascan Scanner £70, Sculpt 3D £25, Animate £25, Kindwords £10, Photon Paint £10, Games £5 each. Tel (0422) 355857.

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A590 complete with 2 Meg RAM installed. Boxed as original with all manuals. Genuine reason for sale – upgraded to A1500 £225. ☎ 0403 233167 daytime or 0705 263064 evenings, ask for Don.

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A590 hard drive, 20 Mb with 2Mb of RAM fitted, £200. Commodore 1084S monitor £120. Rombo Vidi Amiga £30. Power external 3.5" drive £30. Amiga 500 in CDL 1500 £50. Andy ☎ 081 985 9042.

A2000 3Mb 40Mb HD at Bridge 5.25" drive. 2 x 3.5 drive VGA Card Multisync monitor Rendale 8802 Citizen 120D Panasonic WV1410 B/W camera. ☎ 0923 231486 £1600.

Amiga 1500 40 Mb disk 3 Mb RAM £550, 8802 Genlock £80, Vidi-Amiga Vidi-RGB £80, Techno Turbo £15, Shirekilo caption designer £75, DPaint IV £35, DVideoIII £35, Pixmate £15. ☎ Bob 0438 728461.

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Issue 15

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24 PIN PRINTERS

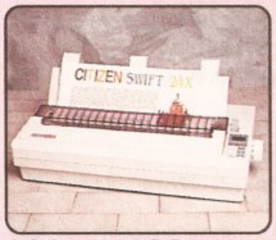


192 CPS 80 COLUMN

- *Citizen 224 - 24 pin - 80 column*
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- *8K Printer Buffer + 4 Fonts*
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SAVING: £137
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LISTINGS

We're looking for programs in any language supported on the Amiga, and we'll pay £20 for any that we publish.

Programs of any type are admissable: serious and useful, wild and wacky, or stunningly creative. Just remember that we can't print listings that rely on binary files for sprites, samples and so on.

All you have to do is pop your program on an AmigaDOS disk (along with source code if it is compiled or assembled) and send it to us at the following address:

Give us your listings! Share the fruits of your programming endeavours with your fellow Amigans and earn fame and fortune (well, £20 anyway)

Listings
Amiga Shopper
Future Publishing
30 Monmouth Street
Bath
BA1 2BW

Don't forget to include a stamped addressed envelope if you want your disk returning.

This month we print a listing from JWP Allison. It's a rather nifty spreadsheet program written in Amiga Basic; which goes to show what can be done with a few lines of code and some imagination.. Well done Mr Allison; as soon as you send us your full address, we'll get £20 sent off to you.

Now, as the program stands it's a little primitive – you can only enter formulae operating on two cells, and each column entry can have a maximum of only five characters. Furthermore, text entries are not permitted. We're interested to see if anyone can write an improved version of the program, overcoming these limitations. Send us your efforts.

Bye for now, and remember – keep those listings rolling! AS

```
REM minispread v1.01a
REM (c)1992 J.W.P Allison

REM setup initial values
WINDOW 1,"Mini-Spread v1.01a  (c) Apr'92 J.W.P ↵
Allison",(15,15)-(435,115),22
GOSUB hello
DIM dta$(8,8):DIM type(8,8)
FOR f=1 TO 8:FOR n=1 TO 8:type(f,n)=0:NEXT n:NEXT f
x=2:y=5
xd=1:yd=1

REM main section
start:
GOSUB display
COLOR 2,1:LOCATE x,y
IF dta$(xd,yd)="" THEN
 REM display blank cell
 PRINT "     "
ELSE
 REM display numeric cell
 IF type(xd,yd)=1 THEN PRINT dta$(xd,yd)
 REM display formulae cell
 IF type(xd,yd)=2 THEN
  na$=LEFT$(dta$(xd,yd),2)
  nb$=RIGHT$(dta$(xd,yd),2)
  numa=VAL(dta$(ASC(LEFT$(na$,1))-96,VAL(RIGHT$(na$,1))))
  numb=VAL(dta$(ASC(LEFT$(nb$,1))-96,VAL(RIGHT$(nb$,1))))
  IF MID$(dta$(xd,yd),3,1)="+" THEN num=numa+numb
  IF MID$(dta$(xd,yd),3,1)="-" THEN num=numa-numb
  IF MID$(dta$(xd,yd),3,1)="*" THEN num=numa*numb
  IF MID$(dta$(xd,yd),3,1)="/" THEN num=numa/numb
  n$=STR$(num)
  PRINT MID$(n$,2,LEN(n$)-1)
  COLOR 1,2
  LOCATE 11,12:PRINT "Formulae: ";dta$(xd,yd)
 END IF
 REM display range cell
 IF type(xd,yd)=3 THEN
  rf$=LEFT$(dta$(xd,yd),2)
  rt$=RIGHT$(dta$(xd,yd),2)
  rtot=0
  IF MID$(dta$(xd,yd),1,1)<>MID$(dta$(xd,yd),4,1) THEN
   ry=VAL(MID$(dta$(xd,yd),2,1))
   FOR f=ASC(LEFT$(rf$,1))-96 TO ASC(LEFT$(rt$,1))-96
    rtot=rtot+VAL(dta$(f,ry))
   NEXT f
  ELSE
   rx=ASC(LEFT$(rf$,1))-96
   FOR f=VAL(MID$(dta$(xd,yd),2,1)) TO VAL(MID$↵
(dta$(xd,yd),5,1))
    rtot=rtot+VAL(dta$(rx,f))
   NEXT f
  END IF
  n$=STR$(rtot)
  PRINT MID$(n$,2,LEN(n$)-1)
  COLOR 1,2
  LOCATE 11,12:PRINT "Formulae: Sum (";dta$(xd,yd);")"
 END IF
END IF
COLOR 1,2
LOCATE 11,1:PRINT "Cell: ";CHR$(xd+96);yd

REM await user command
rep:
i$=INKEY$:IF i$="" THEN rep
i=ASC(i$)
rep2:
IF i=27 THEN WINDOW CLOSE 1:SYSTEM
IF i=139 THEN GOSUB help
IF i=28 AND x>2 THEN x=x-1:xd=xd-1
IF i=29 AND x<9 THEN x=x+1:xd=xd+1
IF i=31 AND y>5 THEN y=y-6:yd=yd-1
IF i=30 AND y<45 THEN y=y+6:yd=yd+1
IF i>96 AND i<123 THEN
 LOCATE 11,1:PRINT "Enter
Formulae":x%=x:y%=y:smax%=5:amax%=5:st$=i$:GOSUB sinput:f$=l$
 IF LEN(f$)<>5 THEN PRINT "ERROR":SLEEP:SLEEP:SLEEP:GOTO start
 IF ASC(LEFT$(f$,1))<97 OR ASC(LEFT$(f$,1))>123 THEN PRINT ↵
"ERROR":SLEEP:SLEEP:SLEEP:GOTO start
 IF ASC(MID$(f$,4,1))<97 OR ASC(MID$(f$,4,1))>123 THEN PRINT ↵
"ERROR":SLEEP:SLEEP:SLEEP:GOTO start
```

```
 dta$(xd,yd)=f$:type(xd,yd)=2
 IF MID$(f$,3,1)="." THEN type(xd,yd)=3
 IF i<96 THEN rep2
END IF
IF i>47 AND i<58 THEN
 LOCATE 11,1:PRINT "Enter Value":x%=x:y%=y:↵
smax%=5:amax%=5:st$=i$:GOSUB sinput:f$=l$
 IF ASC(LEFT$(f$,1))<48 OR ASC(LEFT$(f$,1))>57 THEN PRINT ↵
"ERROR":SLEEP:SLEEP:SLEEP:GOTO start
 dta$(xd,yd)=f$:type(xd,yd)=1
 IF i<47 THEN rep2
END IF
GOTO start

hello:
COLOR 1,2:CLS
LOCATE 1,1:PRINT "    ..1.. ..2.. ..3.. ..4.. ..5.. ..6↵
.. ..7.. ..8.."
LOCATE 2,1:PRINT " A. "
LOCATE 3,1:PRINT " B.              Mini-Spread v1.01a"
LOCATE 4,1:PRINT " C.              __________"
LOCATE 5,1:PRINT " D. "
LOCATE 6,1:PRINT " E.            (c)1992 J.W.P Allison"
LOCATE 7,1:PRINT " F. "
LOCATE 8,1:PRINT " G. "
LOCATE 9,1:PRINT " H.          press any key to proceed"
WHILE INKEY$<>""
WEND
WHILE INKEY$=""
WEND
RETURN

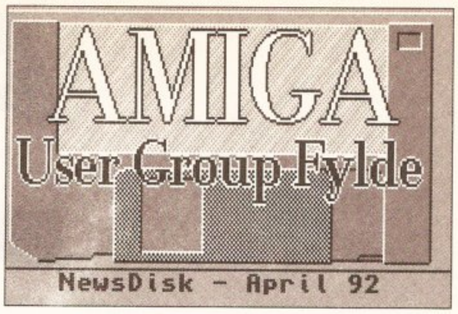
help:
COLOR 1,2:CLS
LOCATE 1,1:PRINT "    ..1.. ..2.. ..3.. ..4.. ..5.. ..6↵
.. ..7.. ..8.."
LOCATE 2,1:PRINT " A. "
LOCATE 3,1:PRINT " B.                 Help Screen"
LOCATE 4,1:PRINT " C.                 _______"
LOCATE 5,1:PRINT " D. Cells can only contain numbers of upto ↵
5 digits"
LOCATE 6,1:PRINT " E. Formulaes consist of simple 'a1+g4' ↵
type with"
LOCATE 7,1:PRINT " F. +-*/ operator or range indicators like ↵
'a1.h1'."
LOCATE 8,1:PRINT " G. "
LOCATE 9,1:PRINT " H.          press any key to proceed"
WHILE INKEY$<>""
WEND
WHILE INKEY$=""
WEND
RETURN


 display:
 COLOR 1,2:CLS
 LOCATE 1,1:PRINT "    ..1.. ..2.. ..3.. ..4.. ..5.. ..6↵
 .. ..7.. ..8.."
 LOCATE 2,1:PRINT " A. "
 LOCATE 3,1:PRINT " B. "
 LOCATE 4,1:PRINT " C. "
 LOCATE 5,1:PRINT " D. "
 LOCATE 6,1:PRINT " E. "
 LOCATE 7,1:PRINT " F. "
 LOCATE 8,1:PRINT " G. "
 LOCATE 9,1:PRINT " H. "
 REM display all cells
 a1=2:b1=5
 FOR a=1 TO 8
  FOR b=1 TO 8
   IF dta$(a,b)<>"" THEN
    LOCATE a1,b1
    IF type(a,b)=1 THEN PRINT dta$(a,b)
    IF type(a,b)=2 THEN
     na$=LEFT$(dta$(a,b),2)
     nb$=RIGHT$(dta$(a,b),2)
     numa=VAL(dta$(ASC(LEFT$(na$,1))-96,VAL(RIGHT$(na$,1))))
     numb=VAL(dta$(ASC(LEFT$(nb$,1))-96,VAL(RIGHT$(nb$,1))))
     IF MID$(dta$(a,b),3,1)="+" THEN num=numa+numb
     IF MID$(dta$(a,b),3,1)="-" THEN num=numa-numb
     IF MID$(dta$(a,b),3,1)="*" THEN num=numa*numb
     IF MID$(dta$(a,b),3,1)="/" THEN num=numa/numb
     n$=STR$(num)
     PRINT MID$(n$,2,LEN(n$)-1)
    END IF
    IF type(a,b)=3 THEN
     rf$=LEFT$(dta$(a,b),2)
     rt$=RIGHT$(dta$(a,b),2)
     rtot=0
     IF MID$(dta$(a,b),1,1)<>MID$(dta$(a,b),4,1) THEN
      ry=VAL(MID$(dta$(a,b),2,1))
      FOR f=ASC(LEFT$(rf$,1))-96 TO ASC(LEFT$(rt$,1))-96
       rtot=rtot+VAL(dta$(f,ry))
      NEXT f
     ELSE
      rx=ASC(LEFT$(rf$,1))-96
      FOR f=VAL(MID$(dta$(a,b),2,1)) TO VAL(MID$↵
(dta$(a,b),5,1))
       rtot=rtot+VAL(dta$(rx,f))
      NEXT f
     END IF
     n$=STR$(rtot)
     PRINT MID$(n$,2,LEN(n$)-1)
    END IF
   END IF
   b1=b1+6
  NEXT b
  a1=a1+1:b1=5
NEXT a
RETURN

sinput:
 in$="":oy%=y%:y1=y%:s=1
 IF st$<>"" THEN y%=y1+LEN(st$):in$=st$:IF LEN(st$)>smax% ↵
THEN y%=y1+smax%+1:s=LEN(st$)-smax%
 sstart:
 LOCATE x%,y1:PRINT SPACE$(smax%+1):LOCATE x%,y1:PRINT ↵
MID$(in$,s,smax%+1)
 ssstart:
 LOCATE x%,y%:PRINT "_":key$=INKEY$:IF key$<>"" THEN sinok
 FOR f=1 TO 500:key$=INKEY$:IF key$<>"" THEN sinok
 NEXT f
 LOCATE x%,y%:PRINT " ":key$=INKEY$:IF key$<>"" THEN sinok
 FOR f=1 TO 400:key$=INKEY$:IF key$<>"" THEN sinok
 NEXT f
 GOTO ssstart
 sinok:
 LOCATE x%,y%:PRINT " ":akey=ASC(key$)
 IF akey>31 AND akey<127 AND LEN(in$)<amax% THEN
  IF LEN(in$)>smax% THEN s=s+1
  in$=in$+key$:LOCATE x%,y1:PRINT  MID$(in$,s,smax%+1):IF ↵
LEN(in$)<=smax%+1 THEN y%=y%+1
  GOTO sstart
 END IF
 IF akey>27 AND akey<32 OR akey=13 THEN LOCATE x%,y1:↵
l$=in$:PRINT  LEFT$(in$,smax%+1):i=akey:RETURN
 IF in$<>"" AND LEN(in$)>0 THEN
  IF akey=127 THEN in$="":s=1:y1=oy%:y%=oy%
  IF akey=8 THEN
   IF LEN(in$)<=smax%+1 THEN in$=LEFT$(in$,LEN(in$)-1):y%=y%-1
   IF LEN(in$)>smax%+1 THEN in$=LEFT$(in$,LEN(in$)-1):s=s-1
   LOCATE x%,y1:PRINT  SPACE$(smax%):LOCATE x%,y1:PRINT ↵
 MID$(in$,s,smax%+1)
   GOTO ssstart
  END IF
 END IF
 GOTO sstart
RETURN
```



PD for free



Ian Wrigley reads up on a mountain of mags-on-a-disk and picks out the very best in freely-distributable software...



Phew! I should have known that I'd start something when I complained that I wasn't seeing much in the way of disk magazines the month before last. No sooner had the issue hit the streets than magazines galore started flooding in. Unfortunately, because of *Amiga Shopper*'s deadlines, I had already written last month's piece by the time the stuff started coming in – so don't be too annoyed if you read my plea in the May issue, sent stuff in and then saw the same message in the June edition. It's all sorted out now, and here we are: probably the closest that we're ever likely to get to a definitive round-up of Amiga disk magazines. On top of that there's the usual peak at the latest PD software.

If your particular offering isn't featured here, do send it in – I'll do my best to cover it in a future column. And if I have mentioned your magazine here, don't stop sending future issues in! Before we go on, though, just a reminder of the PD product locator on page 158.

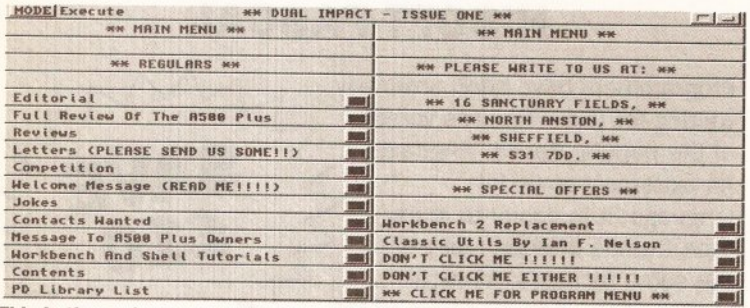
DUAL IMPACT – Issue 1

By Chris Aubrey and Ian Nelson

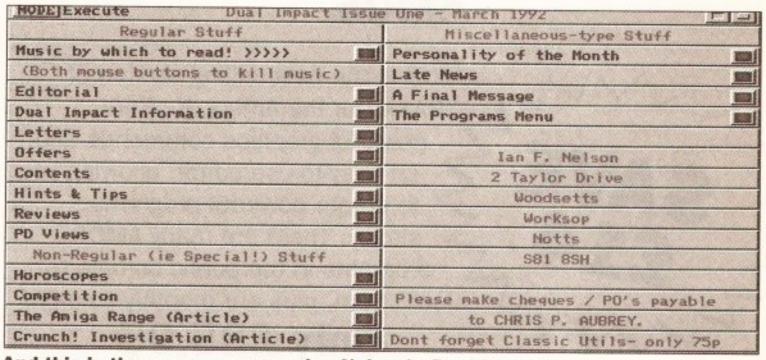
Issue 1 of *Dual Impact* is, as with all disk magazines, auto-booting. It starts with two virus-checkers, both of which tell you that the boot block of the disk is free from viruses. Then comes a quick message telling you how to get rid of the initial magazine logo and music, followed by the logo itself. If I'd read the message, I might have waited less than a minute, looking at the black-and-white illustration, before I started randomly hitting keys. How about a time-out on the logo, Chris? Oh, and while I'm complaining, you might like your cursor to track across the screen at a snail's pace when you move the mouse, but a Preferences util so that the rest of us could speed the thing up would have been nice!

After the logo comes some pretty reasonable music; click again and the magazine proper loads. The introductory message explains that *Dual Impact* (which was to have been

continued on page 148



This is the main menu for Chris Aubrey's *Dual Impact* disk. The menuing system is courtesy of a program called *Menumaster*, which seems to be very popular throughout the Amiga community



And this is the menu screen on Ian Nelson's *Dual Impact*

BEGINNERS — BEGINNERS START HERE — BEGINNERS

What is PD?

PD is a general term which many people incorrectly use to refer to all freely-distributable software. In fact, PD (which stands for Public Domain) software is only one branch of this area; the other main one is shareware.

Essentially, PD software may be copied and used by anyone, although some authors place restrictions such as not allowing a PD library to charge more than a certain amount for the disk.

Shareware, on the other hand, should be treated more like commercial software. Although you are allowed to copy and pass around shareware programs, if you like one then you should pay the requested fee to the author – it's normally only £15 or less, and often entitles you to an upgraded version or a printed manual. Paying your shareware fees encourages software authors to write more programs – and if they don't, the Amiga scene will be a poorer place.

Can I pass other people copies of PD?

Yes – that's the way that it gets to a wide audience. Just make sure that you have followed the author's requirements for distribution – normally that you don't charge more than a certain amount for the disk, or that you make sure that all the documentation is included on the disk.

You can also pass on shareware – but not any registered copies of programs. If, when you pay your shareware fee, the author sends you an improved version of the program, then be careful not to give that out. Only pass on unregistered shareware.

CUT, TICK & POST.....CUT, TICK & POST

Telephone or Fax Hotline (0702) 466933

PD Soft (CU36) 1 Bryant Ave, Southend-on-Sea, ESSEX, SS1 2YD

MasterCard VISA

VARIOUS UTILITIES

❑x **V13 PLAY & READ (2)** A collection of education programs for the under 7 year old's.
❑x **V16 FISH TANK SIMULATOR** A program that simulates an aquarium. Visually pleasing.
❑x **V28 WORD WRIGHT & AMIGA SPELL,** Contains over 9,000 words & more words can be added.
❑x **V29 HOUSE HOLD INVENTORY** Means of maintaining all your House hold possessions.
❑x **V41 DPAINT ART** Conatins loads of pictures for you to mess around with. Loads into your Dpaint.
❑x **V48 TV & VIDEO GRAPHICS (8)** Packed with background screens for your video productions, Different types of graphic styles. **Peel,** takes an IFF Picture & peels it down the screen, & Much More.
❑x **V86 VIDEO PRODUCTION (2)** Both disks are Packed with video & Genlock utilities.
❑x **V109 PRINT STUDIO** Excellent for printing pictures or text. An excellent program for all printer owners.
❑x **V191 MASTER VIRUS KILLER** Virus Checker & Killer. With Excellent options. Includes search disk.
❑ **V193 THE EMULATORS** Covers Various **(2)** Formats which includes **CPM. IBM-PC & ST** Require 2 drives.
❑x **V194 M.R.BACKUP HD** An excellent Hard disk back up program. Backs up all or any part of the drive.
❑x **V195 GRAPHIC INTERCHANGE** Interchange graphics Between Atari St/PC Graphics to the Amiga.
❑x **V215 DISKMASTER v3.2** Copies files from one disk to another. **DISKSALV** Corrects & repairs.
❑ **V261 TEXTPLUS VERSION 3.0** This disk is not just an update but completly New Word processor.
❑x **V262 DUPLICATION & BACKUP:** Super Duper,Turbo copy, Sanity copy & PCopy. Four new copiers to backup your originals for save keeping.
❑x **V277 FORTRAN-77 v1.3c** Compiler, linker & run time support library. F470
❑x **V279 CROSSWORD CREATOR** A program that creates crosswords. UPDATED VERSION.
❑x **V284 MCAD PROGRAM** The Object Drawing Program for the Amiga.ie CAD
❑x **V285 EDUCATIONAL : TYPING TUTOR** A Simple typing which measures your speed on the keyboard.
❑x **V291 POSTSCRIPT INTERPRESTER v1.5** Down load any Post Script Fonts to your printer. Like a laser Printer.
❑x **V298 NORTH C v1.3 (2)** The most famous C: language on the Amiga, Encludes all files required.
❑x **V301 EYE OF THE BEHOLDER HINT BOOK** Inc Introduction, Background, Maps, Strategy & Solution.
❑x **V304 CHAOS STRIKES BACK HINT BOOK** Inc Introduction, Background, Maps, Strategy & Solution.
❑ **V306 A-GENE v3.125** Lastest version of the Family Tree program. Reviewed in CU Amiga.
❑x **V311 JACK NICKIUS COURSE DISKS (5)** A selection of Extra courses designed with the construction kit.
❑x **V323 ANALTICALC SPREAD SHEET (2)** This is the best spread sheet program to date on the Amiga.
❑ **V327 THE SOUND TRACKER CONVERTER** Load in a sound tracker tune & save an executable File.
❑ **V330 RED SECTOR EXTRAS DISK 1** On this disk are : 32 point Fonts, 16 Point fonts, vector stats, Star fields & music Space Journey Lorna. By The deadzone Troopers.
❑ **V331 RED SECTOR EXTRAS DISK 2** On this disk are Big logos,little Logos,Vector Stars, Starfields, Bob Anims, Vector Objects, Vector Ball Objects & various Fonts.
❑x **V332 AMIGA PUNT PROGRAM** Predict which horse will win with this horse prediction program.
❑x **V333 KING JAMES (4)** This version of the Bible By King james has been typing onto disk & Packed on (4)
❑ **V338 TRANSFORMER v3.3** This is the Latest version of the IBM Emulator disk. Require an MS-Dos disk.
❑x **V339 SPECTRUM EMULATOR DATA DISK 1**: Adventure Classics needs v216 or v443
❑ **V340 TSB VECTOR DESIGNER** The Special Bothers presnets The TSB Vector designer **v1.1,** This program will create filled vector objects, line vectors & Bobs.
❑x **V341 CLIP ART COLLECTION 2:** Eight more disks fully packed with excellent clip art. **(8)**
❑x **V349 SID v1.06** Replaces the CLI Command line & makes life very easy. Recommended for all
❑x **V350 BUSINESS CARD MAKER** Design your own Business cards on the Amiga.
❑x **V354 PDS UTILITIES No 13 : FREECOPY,** Removes protected games copy protection so that the user can install them on his/her hard disk. **DCAT,** Can create your own disk catalogue. **SCENERY,** Creates some excellent fractal based land scapes. **NUKE v1.4**
❑x **V358 GENESIS LANDSCAPE** Sculpt or Mould any fractal landscape in various types & sizes, Shareware.
❑x **V361 PDS UTILITIES 14 : MODCONVERT,** Program. **NOISE PLAYER,** Program. **MULTI PLAYER,** Program. which will play various modules not just one type.
❑ **V365 RED SECTOR MODULES (MUSIC) :** Various music modules for use with the RSI Demo Maker .
❑x **V366 600 BUSINESS LETTERS** There are over 600 Standard business letters on this disk. Can be used as they are, or insert some parts into your own letters/text.
❑x **V390 THE DESK TOP PUBLISHING PROGRAM** The first amiga PD Desk Top Publishing program. Includes various extra features over the old Word processor, Test Editor, Graphics editor & loads more.
❑x **V392 AMICASH BANKIN** The best bankin program that i have ever used on the Amiga. easy controls.
❑x **V393 PDS UTILITIES No 15 : BOOTGAMES,** The idea is to install one of two games onto your disks bootblock. **Breakout & Breaker,** Very simple to use. **BOOTGEN,** Another boot block program. **BOOTPIC,** This program will install any IFF picture onto your disks bootblock. **TRAINER MAKER.**
❑x **V394 CHEMESTETIC,** A program that draws molecules using the calotte model. Excellent effects.
❑ **V395 UEDIT WORD PROCESSOR v2.6h** This is an excellent Word Processor with various learn modes, Menu customization, Hypertext, On line help, A teach mode, Split windows, Copy, Paste, Undo & More.
❑x **V396 PDS UTILITIES No 16: DATAEASY,** Excellent Database program. A nice menu driven system. **LANDSCAPE,** Based around a landscape drawing
❑x **V397 MANDELBROT ADVENTURE KIT** A well done mandelbrot Generator with full source Code.
❑x **V399 PDS UTILITIES No 17 : STITCHERY,** A niting pattern program. **SMOVIE,** Video production scroller.
❑x **V400 RAY TRACER CONSTRUCTION KIT** A Ray tracer for the Amiga computer. Load Workbench first
❑x **V401 WINDOWBENCH v1.0 (2)** An excellent Work-bench II replacement for all v1.3 users. Recomended.
❑x **V403 AMOS UPDATE v1.32** This is the latest RAMOS update for the Amos Programmer.
❑x **V410 PDS UTILITIES No 1: PRINTING UTILITIES** PPType, PPShow, ABFD, View, Tiny Print, **FASTJET,** A program for Deskjet 500 users you want to use the resolution enhanced graphic set. **GWPrint II .**
❑x **V413 WORKBENCH 2 & WORK STATION** This is not just another workbench clone. It's a collection of utilities with the Workbench theme. **(2)**
❑x **V415 VIDEO SCREENS:1** Excellent back ground pictures for video production work. Nice back drops.
❑x **V417 SUPERBENCH & EXTRAS (2)** An excellent re-placement disk with more utilities than the original WB
❑ **V420 CURSOR BASIC COMPILER** Compile any Amiga Basic program with this utility disk.
❑x **V423 C: COMMANDS** This disk is filled with utilities which can be used in Startup-sequences
❑x **V424 PDS UTILITIES No 18** Utilities include, **Anti-flicker** program, Said to stop the flicker in High Res. **Atari ST Emulator**, Program to turn your amiga into an ST.
❑x **V431 IMPLODER v4.0** Reduces file size for sorage on hard drives our your own collection disks.
❑x **V433 ANIMATION STUDIO** An excellent Animation crestor for you to make your own.
❑x **V438 OPTI UTILITIES v2.0** This disk is packed with some excellent hard disk utilities.
❑x **V439 AMIGA C: MANUAL II** This manual is the complete C: manual for the Amiga & describes open & work with all parts of the C: system. It also contains various examples, some simple & some morecomplex all the way through the disks a tutorial is there to help you out. **(4)**
❑x **V443 SPECTRUM EMULATOR v1.2 By KGB** Main updated feature is it now has sound ability.
❑x **V444 PRINTER DRIVER UPDATE DISK III** Now contains instructionon how to install them. All previous drivers included on this disk. Over 90
❑x **V445 JRCOMM v1.02** This is the latest version of the excellent modem based computer program.
❑x **V455 LAND BUILDER** A fractal generating program to generate landscapes.
❑ **V463 SUPER C: COMMANDS** The disk is not as full as some others but comes with full instrustion.
❑x **V468 DIGITAL ADRESS BOOK** Collect & save your address lists on computer. Shareware.
❑x **V475 P.SUITE v1.4** A collection of programs called **P.Write**, a simple word processor, **P-Draw, P-Render** and much much more. Excellent disk
❑x **V479 CHESS & CHESS UTILITIES** A collection of chess related Puzzles, Programs & Utilities.
❑ **V483 THE RIPPERS GUIDE** A collection of help full utilities for people you rip pictures & sounds.
❑ **V484 ADVETURE SOLUTIONS (2)** Another good collection of adventure solutions for various games.
❑x **V489 AMIBASE PROFESSIONAL II** The latest updated version of the excellent Database progam. now includes various excellent new features.
❑x **V490 MESSY SID II** This is the latest version. It will read MS-Dos disks and tranfer any text files to & from the PC disk / Your Amiga. So you can do work on an IBM or an Amiga and swop text between them.
❑x **V492 JAM RIPPER v1.7 & JAM CRACKER v1.0** Also contains an excellent music ripper program.
❑x **V493 DESKBENCH (3)** This is an excellent Workbench replacment with special utilities.
❑x **V497 BEATRIX POTTER CLIP ART** An excellent collection of clip art for any DTP program or Dpaint.
❑ **V498 THIEF SOUND RIPPER v3.0** Finds Sidmon 1, 2 (Midi), JHam cracker, future Composer, Sound monitor, Noise/Protracker, Startrekker, Delta, sound system, david Whiaker & Noisepacker.
❑x **V499 STAR CHART v1.2** This is an excellent star plotting program with some intresting features.
❑x **V509 MED v3.2** This is another update to the Ultimate sound music Editor program.
❑x **V510 LITTLEBENCH** This workbench replacement is the first one for the new Amiga 500p Computer.
❑x **V515 THE A64 PACKAGE v2.0 (2)** A very complete C 64 Emulator Actually runs faster that 64. Runs 64 basic. Transfers disks from your original 64 disk drive with a shareware lead.
❑x **V517 VIDEO & AMIN : VIDEO_DB,** A program for keepin track on your video tape collections. **RTAP,** Lets you play large Anims on small Mem machines.
❑x **V518 IMAGE LAB** Performs many effects from simple averaging to fast fourier transforms. **Tools On Tap,** Does fades, colourbars & gray bar generation.
❑x **V519 STILLSTORE** Used to create over the shoulder graphic inserts like the 9'0 clock news.
❑x **V520 GRAPHICS : AGRAPH,** Creates colourfull pie, bar and line graphs. **PICBASE,** Shows reduced versions of all your IFF pictures. ** Requires V522
❑x **V521 PLOTTING & GRAPHICS: PLOTXY,** A powerful full featured plotting package. **PLANS,** A well done computer aided drafting program.
❑x **V522 ARP V1.3 : Conman v1.4,** Makes many im-provements to AmigaDos & makes your system easier to use. Includes full users developers guide.
❑x **V523 DICE C COMPILER (2)** Matthew Dillons full feat-ured powerfull C compiler & enviroment system.
❑x **V525 LABEL MAKER v1.3** An excellent disk printing program with various new features.
❑ **V526 DRAW MAP v3.1 (2)** Will now generate any 16 colour palette with user control, New features include larger maps with national boundaries, improved help and printing. 1.2Mb. (1Mb version on disk V263)
❑x **V528 PDS UTLS:20 : SUPERDUPER,** Another excellent disk copy program. Latest update with new feature. **Diskspeed & FullView.**
❑x **V529 FRACTAL & SCULPT 4d: Tree 4d,** Creates sculpt 4d trees with leaves. Contour 4d, IFSGen & Plasma.
❑x **V530 BUDGET** A program to help managing personal finances. This is a update to disk V280.
❑x **V536 CATALOGUE UTILITIES** A collection of utilities used to Catalogue disk/ Video/ Tape collections **(2)**
❑x **V543 DISK STATION (2)** An excellent workbench replacement with built in utilities like Sid and others
❑x **V546 KIDS PAINT** A painting program designed for children. Includes various colours and speech.
❑ **V547 RADBENCH v1.4** Another workbench replacment /Enhancement disk.
❑x **V549 ELECTROCAD v1.4** Another Updated on the cad drawning preview written in Amos.
❑x**V550 KEFRENS POWER UTILITIES : NewTopaz, Power Fonts,** Create, Edit or change any 8x8 or 16x16 fonts. **Window,** Change size of dos windows.
❑x **V552 PRINT UTILITIES** Disktik, HyperCat, Label print, Super retlab, LabelBase III.
❑ **V553 SHADOW UTILITIES** Raster Blaster II, Simplesinal & Text Writter **v1.0.**
❑ **V554 R.S.I. MUSIC MODULES 2/3** Another selection of music from Red Section. **(2)**
❑ **V556 RED SECTOR HELP DISK** Another disk to help you use the Red Sector Demo Creator.
❑x **V557 TOO SEXY UTILITIES** A very large selection of utilities Including, V-Checker, Print Studio, Super Dupper & Nuke. Far to many utilities to list.
❑ **V559 PUMA TRACKER v.99** Another good sound tracker close. Used to create the music from Toki.
❑ **V560 10 AMIGA PD COPIERS** A collection of copiers like amigaCopy, Coder copy, Pcopy, Rattlecopy & more.
❑x **V562 MORE UTILITIES PopDir, Exchange, QCal,** Excellent little calendar program. **PhoneDir.**
❑x **V567 PRINTER DRIVER GENERATORS** A selection of utilities with various excellent Printer Driver Generators.
❑x **V569 DUNGEON MASTER MAPPER** A littletool that creates maps of dungeons (and eventually towns) which can be used by a DM for use in a AD&D game.
❑x **V570 CHRIS HAMES UTILITIES : DIRWORK v1.51,** Excellent file copier simulal to diskmaster & Sid but contains more commands to hand. Recommend.
❑x **V571 WHOM II v2.02 (2)** An update to the Dr.Who database program. Gives all info on Dr.Who progs
❑x **V573 FILE & HARD DRIVE MANAGEMENT (2) : HDCLICK v2.0,** A program selector to make Hard disk Menus. Starts with gadgets.**FILE MINDER,** Utility for maintaining files & Directories. **DOSCONTROL,** Tool that combines the functionality of many separate tools.
❑x **V575 HOME BUSINESS PACK (6)** An excellent selection of utilities based on word processing, Data Management, Spread Sheets, Accounts & Printing.
❑x **V581 PDS PRINTING No 3 : PRINTER DRIVERS,** HP Deskjet 500 & 500 Colour, Canon BJ10e, BJ130, BJ300, Nec24p, Oki24p, 39p, Star24p, Panasonic9, Seikosha9. **HPMODE,** For use with Deskjet 500
❑x **V582 DB,** A Database with upto 50 fields,max of about 1.2 million records. **CLICKDOS II,** is an Amiga Dos enhacement utility. **FILEFIND & SUPERVIEW v3.0**
❑x **V583 ICONEDITOR III v2.0,** Can create Icons upto 640x200 pixels. **DOCTORICON v1.0,** Imports images as icons, Can Edit & Create any Amiga icons.
❑x **V584 EDUCATION : FASTFACTS,** Everything you ever needed to know about the solar system. **WORLD MAP,** Produces diffenent sorts of world maps. **PLANETS,** instant locations of plants. **MATH MOUNTAIN**
❑x **V585 ARCHIVERS** A selection od most archivers, like LHArc, Zoo, LHWarp, Pak, LZ, PKAZip, Zap, Zippy & more.
❑x **V586 FONTS & C: COMMANDS : DISKSALVE,** Repairs damaged disks. **SWEEP,** Free unUsed allocated memory.. **FONTASSIGN,** Assigns fonts to the SYS path.
❑x **V587 GELIGNITE FONTS (2)** A selection of Amiga fonts for use with any DTP Package or Dpaint disks.
❑ **V590 CRUNCH N COPY** A selection of programs that will crunch files & Copy disks for safe keeping.
❑ **V591 HAMLAB IFF CONVERTERS** GIF to IFF & back. Used with the GIF Machine to convert Pic to the IBM
❑x **V592 MICRO EMACS** This is an excellent Word processor also comes with a Spell checker program
❑x **V593 TEXT ENGINE v3.0** Another excellent word processor program Simple but will do the job
❑x **V598 DATABASE WIZ** This program will record all your Names & Address. Easy Database program.
❑x **V599 BBASE II v5.3** This disk is one of the most well known database program. Recommend.
❑ **V600 DELTA MUSIC EDITOR** An excellent Music editor program. A new flavor in music creation.
❑ **V601 AUDIO MAGIC v2.0** is a collection of sound tracker baseds programs by The Assassins
❑ **V602 UNICOPY v1.0** The copier it self has various excellent copy modes including Locked drive copy.
❑ **V603 POOL FORCAST v1.0** Perm-Check is designed to check football plans for winning lines (1Mb).
❑ **V604 PD COPY v3.0** New disk copy with some extra commands & quick copy modes buit in. (1Mb)
❑x **V605 PRO CALC v1.0** Offers the C or Machine code programmer a 68000 or FFP calculator when is use. (1Mb)
❑ **V606 SAMPLE MAKER v1.0** This works specially for those who are not able to make samples with a sampler.
❑ **V607 PRO TRACKER v2.0** Written by Lars Zap Hamre. Another update to the Ultimate sound making program.
❑ **V608 DCOPY v2.0 PROFFESSIONAL** You can select the speed of the disk drive, Copy modes, Dos, Nibcopy, Ver & safecopy. Loads of other features.
❑x **V610 GOLF SCORES v1.84** It's will record each round you play, Store it, make up an eclectic score NEW! You can also show graphs of scores & performance against par. NEWER! It will now work out stableford points.
❑x **V611 FOOTBALL LEAGUE EDITOR v1.0** Want to update your teams league position as the results are available
❑x **V620 ASPICE v3.2** Circuit Analysis, A full featured program for electric circuit analysis.
❑x **V621 EDWORD v2.2** is a fully featured & operational Word processor which offers all standard features & More like Powerful ones.
❑ **V624 NIB COPIER v2.0** Will copy in AmigaDos, Index Nibble modes, search mode & special parameter copy.
❑x **V625 NCOMM v2.0** Contains, LHArc v2.0, LHArca v1.02, Zoom v5.40, DMS v1.03, LHA v1.11, LHASFX v1.11.
❑x **V627 DPAINT FONTS No's 1-3 (3)** The latest selection Fonts for use with any IFF DTP Program.
❑x **V630 AMICASH** Basically Amicash just keeps track of your transcations with your account/Bank, such as Direct debits, Cheques, Withdrawls.
❑x **V634 DUNGEON MASTER II MAPS** Contains a selection of Maps that you will need to complete the game.
❑ **V635 IBeM EMULATOR PACKAGE v1.05** IBeM is a CGA Colour IBM-PC emulator written to run on any Amiga This is a demostration version with a time limit of 15 minute. The shareware cost is US$30.
❑x **V636 SHADES & FADES: ANIMFADER,** A utility to fade screens in & out. **SUPERVIEW,** Will display IFF pictures. **TURBOTITLE,** Will create subtitles.
❑x **V637 TWIN EXPRESS v1.1a (2)** Trans any file direct from an Amiga or IBM Pc, By connecting the 2 machines to gether with a null modem cable. Board rate 115200.
❑x **V639 RADBENCH PLUS v2.0** This is not an upfate but a completly new set of utilities & workbench replacement.
❑x **V640 PAGESTREAM FONT PACK 1** A selection of fonts for use with Pagestream or other DTP Packages **(5)**
❑x **V645 UEDIT v3.0a** Word Processor with learn modes, Online Help, A teach Mode, Split windows, copy & paste, undo & other more standard features.
❑x **V646 SID v2.0 FILE MANAGER** Sid can be used for various operations, but the best is proberly the file copier.
❑x **V647 WORKBENCH HACKS** A selection of Hacks that have been reviewed in CU Amiga.
❑ **V648 TITANICS CRUNCHER v1.0** New cruncher with help & various protect modes encludes speed changes.
❑x **V649 WP & SPELL CHECKING** A Collection of utilities. **PP v1.4,** Decrunches Power packer files as they arre loaded. **SUPERSPELL v1.1, SPELLCHECKER v1.2, TEXTRA v1.11,** Word processor. **SCRAMBLER v0.1.**
❑x **V650 CHECKBOOK ACCOUNTANT** Will manage your bank account with easy. Very good indeed.
❑x **V651 THE SUPER KILLERS V2.4: BOOT X v4.45,** This is the best virus killer disk to date kills over 240 virus & may be more, Includes excellent killers. Including **VC v6.3, Zero virus III v1.20 & VT v2.39.**
❑x **V652 PAGESTREAM FONT PACK 2** A selection of fonts for use with Pagestream or other DTP Packages **(5)**
❑ **V657 PC TASK** is a software IBM-PC Emulator. It allows you to run the majorit of IBM software with no additional hardware. CGA Colour. **FULL VERSION.**
❑ **V659 COMPUTER DIAGNOSTICS v9.1** Is theres a problem with your computer them what is it.

THE STAR TREK SELECTION

❑x **AT05 KLINGON D7 CRUISER,** fires torpedoes while passing by. **NCC-1864 RELIANT,** Very good anim indeed.
❑x **AT10 ENTERPRICES,** Leaves the Star station dock. **NCC 1701-A,** The classic original Animation.
❑x**AT17 THE TWOK NCC-1860,** Reliant & the NCC 1701-A-Enterprise. **MENSCH ROBOTER.**
❑x **AT18 TWOK-0,** Anim **NCC 1860 Avenger** & **NCC 1701-A-Enterprise.** NCC 1089 Grissom.
❑x **AT22 APPROACHING VESSELS,** Animation, Binary Flight Wireframe landscape by T.Richter
❑x **AT23 STAR TREK FLEET MANEUVER,** NCC-1940 Fly over & by animation. excellent classic
❑x **AT33 THE PROBE II,** Animation. **BRID OF PREY,** Animation from Star Trek. **KLINGONHIT.**
❑x **AT34 LEAVING SPACE OFFICE,** Animation. **DOCKING,** Animation from star trek. **ATTACK MODE,** Bird of Prey Scout hip in attack mode.
❑x **1060 STAR TREK THE NEXT GENERATION,** This game is by Terry A. Mc Intosh. v1.47 *
❑x **1081 THE UTLTIMATE STAR TREK (2)** Game by Tobias Richter. Now with English instructions.
❑x **2222 STAR TREK THE NEXT GENERATION** This is the latest quiz game based on the Next generation **(2)**
❑x **SMAUG120** The **STAR TREK** Game by Eric Gustafson US Inport requires **1Mb** & **(3)** disks.
❑ **SMAUG156 THE STAR TREK** Game by Jimbo Barber The American version **1Mb** & **(2)** disks.
❑x **AMUSE19 TREK73,** A STAR TREK Battle Simulator where you can attack klingons & Romulans
❑x **V367 STAR TREK INFORMATION** A Database of all the original series. Very Detailed.
❑x **V616 THE FINAL FRONTIER ISSUE 1** This is a disk magazine based on Two disks both packed. **(2)**

MEGA DEMOS

He are the best NEW Mega demo's from our collect-ion from the past 2 months. The BESt are listed below
❑ **1988 RAY OF HOPE II BY MAGIX 12**
❑ **2028 IBB MANGAD MEGA DEMO**
❑ **2137 THE WILDFILE MEGA DEMO**
❑ **2250 ODYSSEY ALCATRAZ (5)** This 5 disk space Odyssey needs to been seen to be beleved. Brill
❑ **2259 HARDWIRED CRIONICS (2)**
❑ **2413 DEVILS 'COLOURS' MEGA DEMO**

Eric Schwartz Section

❑x **1700 ANTI LEMMINS** Anim Requires **(2) 2Mb**
❑x **1703 THE DATING GAME** Anim requires **(2) 3Mb**
❑x **1842 SHUTTLE COCK** Animation **(1Mb)**
❑x **1850 LATE NIGHT** & **TERMINAL** Anim **(1Mb)**
❑x **2013 AGILLITY** Animation disk **(1Mb)**
❑x **2021 VIETNAM CONFLICT** Animation **(1Mb)**
❑x **2133 GULF WAR CONFLICT (2Mb)**
❑x **2307 AMY AT THE MOVIES II (4) 1Mb** Only.
❑x **2311 AMY vs THE WALKER II (2) 3Mb**
❑x **2384 AMY AT THE BEACH (2)** Probley the best animation by ES to date, Excellent **3Mb**
❑x **2427 CAMOURFLAGE ANIM 1Mb**
❑x **2428 MR POTATO HEAD'THE CIRCUS ACT (2)** By Chris Hill. know this is not an ES Anim but it upto his standard & features one of his characters The Harrier. Excellent story.
❑x **2430 SKUNKS & HUNKS:POGO II** Animation **2Mb**
❑x **2474 AMYHIST** Introduces Amy the squirrel
❑x **2475 BATMAN,** Another Animation.**VTOL,** about a Harrier vs Propeller plane contest.
❑x **2476 HOW TO RUN,** How to run into a wall. Very funny Animation by Eric Schwartz.
❑x **2477 AMYWALKS,** Anim of Amy the squirrel Walking. **AMYJOGS,** Anim of Amy the Squirrel Walking
❑x **2478 UNSPORTING 2Mb** Starring the A10 Thunderbolt aircraft better known as the WarHog. Hunt & Destroy tanks.

THE GAMES SELECTION

❑ **1073 TETRIS ORIGINAL**This is the closest game to the original tetris computer game. A Classic
❑x **1420 DTRIS** This is the best 2 Player Tetris game.
❑x **1454 MEGA BALL** An excellent Arkanoid game
❑x **1486 SOLITAIRE & SOLITAIRE ROYAL** Card games
❑x **1561 TRITWIS** This is the best version of Tetris on the Amiga. with 1 player, 2 player & 3 Payer options.
❑x **1735 ASTERIODS** 'THE ORIGINAL' Another old classic. This is the original classic computer game.
❑ **1747 LLAMATRON GAME 2001 By Jeff Minter** Briliant stuff & An excellent production. Shoot to kill
❑x **1749 SCRAMBLE** 'The Original'Remember that old classic well is now on the Amiga.The Shoot em up.
❑x **1870 PATIENCE'S,** This is the best version to date. **DOMINOS,** Play vs the computer or another player.
❑x **1977 POM POM GUNNER** Shoot down the incom-ing world wor II air planes in this Operation Wolf type game
❑x **1981 TRUCKING ON** A truck traveling adventure trading game. An excellent simulator. **(2)**
❑ **2018 JETMAN** Another Spectrum classic converted to the amiga. It's JetPak with all the original sounds.
❑x **2022 SEA LANCE** The first Silent Service type sub war game within our Amiga PD collection.
❑x **2054 ATIC ATAC** A rendition of the game from the original Spectrum computer. Graphic Maze adventure
❑x **2162 BATTLE OF BRITIAN WAR GAME** 2 Strategy war games which both need loading through Wb.
❑x **2164 DUNGEON ON NADROJ** This is the best Dungeons & Dragons Public domain type game
❑ **2173 CARD GAMES,** Various card games titled Cribbage, Blue Moon, King, Patience & Hearts.
❑x **2178 SURVIVOR** A space based adveture game within the Aliens theme. Nice colourfull graphics
❑x **2179 ADVENTURES IN HELL** A collection of six games, Jedi, Star trek, Atlantis, Ring & Indication.
❑x **2180 SKODA CHALLENGE** An excellect 4 player hotRod game written in Amos. Simple but good fun.
❑x **2185 BATTLECARS** Excellent Solid 3d Graphics. travel around, track down the other cars & destroy.
❑x **2199 PARACHUTE JOUST** You are falling down to earth. & must take the Parachute from the other player.
❑x **2219 NAPOLENIC WAR SIMULATOR v5.0** An excellent simulator program, Sent direct by the Author.
❑x **2220 STRATEGIC GAMES,** Eternal Rome, Lords of Hosts, In Moonshine. An Excellent collection.of games.
❑x **2221 MIND GAMES 21** of the best Mind games to challenge your mind not your shooting skills.
❑ **2224 SWORD OF THE WARLOCK** A Bards tales / Eye of the Beholder adventure game packed on three disks. The best Shareware role playing game on the amiga. Excellent Adveture. **(3) 1Mb (2 Drives)**
❑x **2272 BLACK JACK LAB** Play Pontoon upto 7 Players. The computer plays banker & knows the popular versions of the game.
❑x **2278 CARD SHARP** A very professionally presented selection of solitaire type card games. Excellent versions
❑x **2279 SUB ATTACK v1.0** Control the torpedoes & sink the enemy ships as they sail past. **LANDMINE.**
❑x **2280 DIPLOMANCY v2.0** A classic strategy game loosely based on World War 1. A very detailed game.
❑x **2313 REVENGE OF THE MUTANT CAMELS** By Jeff Minter The ride of a life time with mutant camels
❑x **2357 SPACE POKER** The alternative Poker Game
❑x **2411 TOTAL WAR** The board game version of RISK
❑x **2412 FORMULA 1 SIMULATOR** Anaditive simulator
❑x **2432 GOLDEN OLDIES** Galaga, Galaxians, Space invaders, Asteriods, Batty, Missle Command & Slimeline.
❑x **2447 AMOS COINDROP FRUIT MACHINE** Excellent simulator with various gamble modes. Great fun...
❑x **2450 SMASH TV - THE RIP OFF** Simular to the original arcade machine. With neat grapgics & sound
❑x **2455 MAYHEM** Guide your space ship through the space caverns, shoot things & open the space gates.
❑x **2456 LETTRIX** A new Tetris variant where you positon tiles within a letter. time limit so be fast about it.
❑x **APD329 AMOS FRUIT MACHINE II** As near as possable to the fruit machine found in Pubs & Arcades.
❑x **SMAUG312 AMI MORIA v5.22** This is the latest update to the Original Moria adventure game. Better graphics, and the larest adventure to date. Excellent

AMOS & FRED FISH DISKS

❑x **APD151 UNDERSTANDING AMOS** The Amos Tutorial Program Disk. A must
❑ **APD356 POWERBASE v2.0** This is an easy, friendly and Powerfully database which can handle 10,000 records.
❑ **F549 VERSEWISE v1.0** Gospel (M,M,L & J) of the Bible view, output, search program. jump to any verse.
❑ **F562 SHOW GURU v2.1b** Recognizes 168 different guru numbers & translates them into English.
❑ **F572 MULTIPLOT v1.1** One of the most powerful data plotting packages available. Excellent abilities.
❑ **F574 NEWZAP v3.3** A third generation multi purpose file sector editing utility. Includes an excellent search feature.
❑ **F580 WORLD DATABANK v2.2** Using a data base from the CIA, this program will plot world maps.
❑ **F590 SUPERDUPER v2.01** A very fast disk copier & formatter. Verified copies very quickly indead.
❑ **F593 ANALYRIM (2)** An intergration of AnalyiCalc spreadsheet & RIM-5 Database management.
❑ **F598 DX100 & TX81Z EDITORS** A voice editor & librarian for the Yamaha DX100, DX27 & DX21 synthesisers.
❑ **F621 MULTIPLAYER v1.17** Music player program which plays soundtracker/Noisetracker modules.
❑ **F625 CLBP v1.01** Canon Laser Printer Driver Package, Includes extra preferences with additional options
❑ **F627 ADOC v7.04** A Help utility for the Amiga. You will have permanent help on any subject you want.
❑ **F628 LEGEND OF LOTHIAN v1.02** is an adventure game in the vien of the Ultima game series. Includes colourful graphics, Hordes of monsters & puzzles to solve.
❑ **F630 BICS v1.10** Boot Intro Construction Set is a tool to create a small intro on the bootblock which appear when a disk is inserted.
❑ **F631 AHDM v3.00a** Hard disk menu system offers a sixteen page menu, each page having upto ten possible actions. Just double click on the option.
❑ **F632 PRINTFILES v0.9** A print utility to replace the standard workbench printfiles command. WB2 Only
❑ **F633 PLANS v2.1** Demo version of a drawing program with user definable fonts, excellent features.
❑ **F634 SLICER v2.0** Will create abstract art based on mathematical functions. such as mandelbrot set. **NEW PRINT v2.1,** A program for formatting textfiles so that they can adjust all the margins. Optional Shareware.
❑ **F635 BOOTPIC v2.0,** Allows you to install nearly any IFF Picture that you like in place of the Workbench hand.
❑ **F636 ALERT v1.0,** Gives detailed information about the meaning of various Amiga alerts. **ENVPRINT v1.5**
❑ **F637 LAZi v1.1** a utility for use with archivers. You can add, delete, extract & update single or multiple files. **LHA v1.22,** Latest version from Stefan Boberg, Shareware.
❑ **F638 POWERMAXE v1.13** A powerful machine laguage level debugger for the serious Amiga Programmer.
❑ **F639 DRAWMAP v4.0 (2)** Latest version with NEW features like full Micro World Data Bank files. 1.6Mb

LATEST DEMO DISKS (Phone for A500 Plus)

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❑ **2407** MUSIX OF THE WORLD DAZZLE	❑ **2444** BBSTRO BY R.A.F.
❑ **2408** INNER MADNESS BY ANTHROX	❑ **2445** LSD GRAPEVINE #9 (2)
❑ **2415** CHINA SHOP	❑ **2448** CRAZY SUE
❑ **2417** SKYFLYER	❑ **2451** APIDYA PREVIEW
❑ **2418** AIRMANIA	❑ **2452** SHOUTOUT GAME
❑ **2419** WARP DRIVE GAMES	❑ **2453** READY ROBOT
❑ **2420** VIKING ANIM	❑ **2454** MERV THE MERCILESS
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❑ **2425** DREAMERS DISK MAG#3	❑ **2461** A NIGHT AT THE TOP
❑ **2426** ZINE MAGAZINE # 7	❑ **2463** LANDSCAPE ANIM
❑ **2431** EASTER ISLAND ANIM	❑ **2465** THE LEMMINGS ANIM
❑ **2433** BRIAN BOLLARD SLIDES	❑ **2466** RAY TRACED DREAMS
❑ **2435** VINGT-ET-UN / ORB IT	❑ **2467** DEAD ALIEN ANIMATION
❑ **2436** DRAGON TILES V2.5	❑ **2469** NIGHTSHADE / PULSAR
❑ **2437** FRIDAY THE 13TH (2)	❑ **2470** FIRELAND / FIRECREW
❑ **2439** ALCATRAZ MUSIC DISK ONE	❑ **2471** FACE THE REALITY (2) MD
❑ **2440** OUTSIDERS CONCERT DISK	❑ **2473** CAT COMPUTER CLUB / TSL
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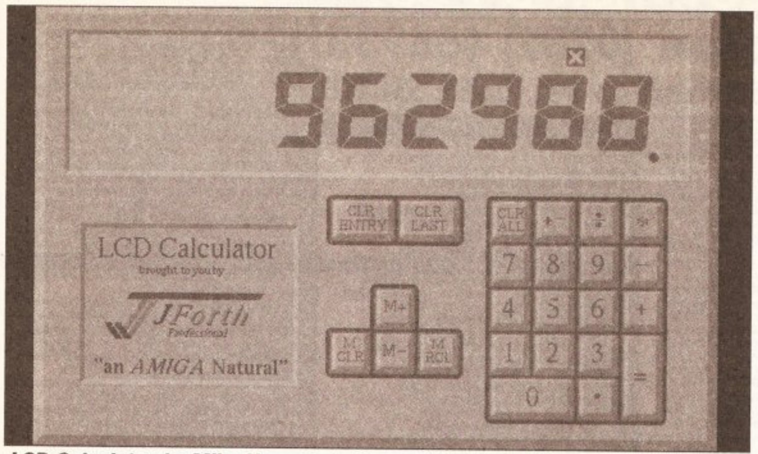
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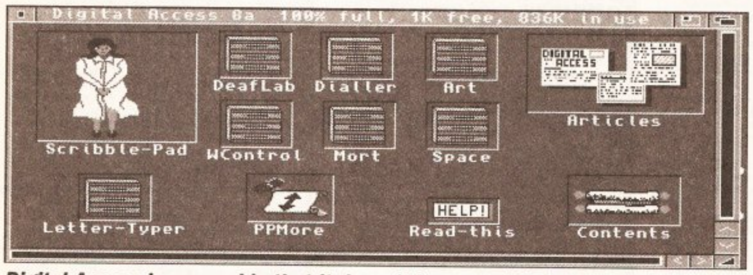
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LCD Calculator*, by Mike Haas, is just one of the programs on *Dual Impact



***Digital Access* is unusual in that it doesn't have any kind of front-end menu. This is the window that appears when disk 1 autoboots**

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called Double Impact, until the film of the same name appeared) is written by two people; each person compiles one full disk. This is a nice idea – even if you don't like the editorial style or selection of programs of one of the compilers, you've always got another disk.

Chris' disk contains some useful utilities such as *Last Hope*, a program which claims to be able to recover files that you've accidentally deleted, and *LCD Calculator*, which is a replacement for the calculator supplied on your Workbench disks. He says that, because he compiles the magazine on an A500 Plus, everything will work if you own one of these beasts. (How much, if any, PD software will work on the A600 is anyone's guess...)

There is also an editorial, some jokes, a couple of advertisements, some music and a game.

The editorial on Ian Nelson's disk says that the two are created totally independently; I hope that there's some checking to make sure that you don't duplicate stuff, lads! There's the option to listen to some music in the background while you're browsing through Ian's disk; after a couple of minutes, though, I decided that silence is definitely golden. This disk is heavier on the games than Chris': only two utilities (*SysInfo* and *TextEngine 3.0*), but three games and a demo. The demo is the rather excellent (although rather short) *Vietnam Conflict*, by Eric Schwartz.

Dual Impact costs £3 for the two disks, and is available by sending a cheque to Chris Aubrey at 16 Sanctuary Fields, North Anston, Sheffield S31 7DD.

Value for money 8/10

DIGITAL ACCESS – Issue 9

By Steven Lord

Digital Access used to be known as *The Disk*, until it outgrew that title by turning into a two-disk affair. It was previously a bi-monthly, but Steven has found that the amount of work involved has meant that in future it will appear every three months. Issue 9 will be available in mid-June.

Rather than having a main menu, *Digital Access* comes on disks which present the standard Workbench 1.3 screen, from which you double-click on items and drawers that you are interested in. Text is displayed using *sMovie*, which very smoothly scrolls it up the screen. The only problem is that there is no way to reverse text flow and re-read something, short of double-clicking again. If you really find this tiresome, *PPMore* is supplied on the disk – along with full instructions on how to get it to display the files.

Disk A is the only autobooting disk; you will need a second drive or be willing to do a lot of disk swapping to access disk B.

I'm surprised that Steven has decided not to use a menu for the disk, but in some ways that's preferable; because he leaves a CLI window on the screen, you can access normal AmigaDOS functions easily.

Digital Access contains a wide range of articles and programs, ranging from demos to utilities which help teach hand signing for the deaf. There are a selection of images – together with *PPShow*, an image viewing program – and even a couple of letters. The editorial is well-written, and Steven has obviously gone to a great deal of trouble to get his magazine looking as good as possible.

Digital Access is available from Steven Lord, 6 Stubbing Brink, Hebden Bridge, West Yorkshire HX7 6LR. A two-disk issue costs £2.50.

Value for money 7/10

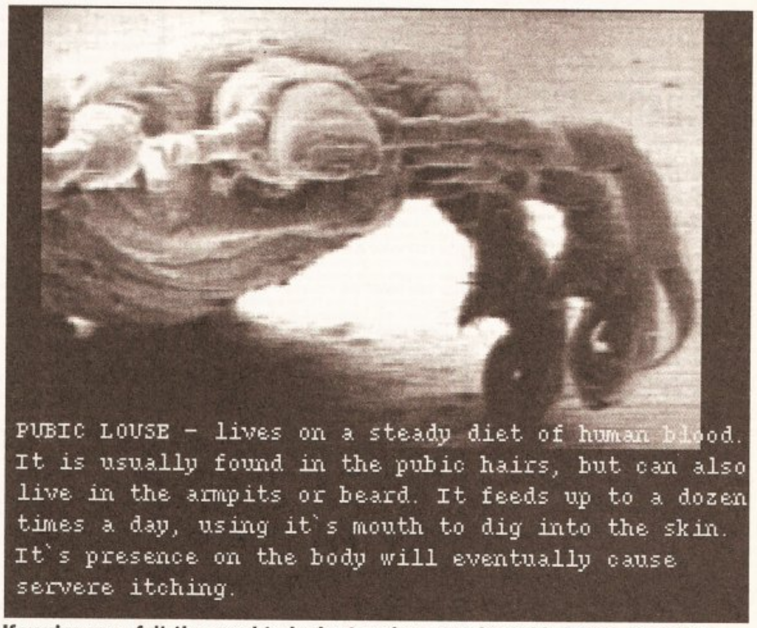
THE INVISIBLE WORLD 2

By Steven Lord

Not really a disk magazine, this, but rather a slideshow of highly magnified pictures from the author of *Digital Access*. The images are of such things as an ant's eye, a bee's stinger, the surface of paper, cancer cells and an amoeba.

All the images are in black-and-white, and fade in and out as a key is pressed. The disk costs £1.50, and is available from Steven Lord at the same address as Digital Access, or from various PD houses.

Value for money 6/10



If you've ever felt the need to look at a close-up of a pubic louse, then *The Invisible World* is the disk for you

TDH – Issue 1

By Andrew Woods and Steven Borrett

TDH autoboots to produce a neat-looking menu, and some music which – as with all background music – gets rather annoying after a while. Rather than displaying text in a standard Muchmore/PPMore/More viewer, it instead appears one screen at a time – there's no way to scroll back, or only to advance a couple of lines.

The disk contains a few good-looking images, including some which have obviously been scanned

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DISK MAGAZINES

Disk magazines are collections of text, graphics, demos, games and utilities put together by dedicated (some would say mad) enthusiasts. They are often a good way to get hold of collections of PD software, since the authors have usually done some form of quality control job, and have weeded out much of the dross.

During the early days of the Amiga 500 Plus, many disk magazines had compatibility problems with the new machine, and would only work partially – if at all. Now, the situation has much improved and it would be surprising to find any disk-based mag which didn't boot up normally on an A500 Plus.

One thing which you should remember is that, with a couple of exceptions, disk-based magazines are not freely distributable. The authors have put a lot of work into their products, and normally only ask a couple of quid per issue. So don't just pass your copy on to other people; if you do that, you are depriving the magazine's author of his or her dues, and the chances are that the mag will cease publication due to lack of funds. If you find a disk magazine that you like, support it by paying – that way, it will thrive and improve.



General Amiga is a well thought out, well put together offering; issue 12 is worth £1.50 of anyone's money

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or framegrabbed, and a couple of nice raytraced pics. There are a couple of utilities on the disk, including *TetraCopy* (a disk copier with a built-in game of *Tetris*), but you will have to boot from a standard DOS disk.

The first issue of *TDH* is public domain, and can be freely distributed. This is so that the authors get some initial publicity; from issue two onwards, *TDH* will cost £2, and is available from 1 Westwood Gardens, Scarborough, North Yorkshire YO11 2JQ.

To be honest, though, I think that perhaps the user interface needs a little work on it; and it would be good if there was a little more content in terms of software, demos and so on.

Value for money 6/10

GENERAL AMIGA – Issue 12

By Ronnie James

General Amiga boots up with the *Nuke!* virus checker, and then displays a rather impressive title screen. Hitting a key moves on (although there are no instructions to tell you what to do), and takes you to the main menu screen – which user Francois Nico's *Program Selector* to perform the actual menuing.

A clock is permanently present in the menu bar, and the editorial introduces new readers to the magazine. It's well written, and seems to have far fewer than the normal number of spelling mistakes which you tend to find on disk mags. The cursor gives away the origin of the magazine: it's in the form of a Scottish thistle.

Clicking some of the menu selections takes you on to sub-menus: for instance, there's a whole new menu under the main heading Articles to entertain and inform. These articles include such things as a beginner's corner with articles on WIMP. (Did no-one tell you that WIMP is an out-of-date acronym, Ronnie? Propellorheads are now talking about GUIs – Graphical User Interfaces – instead.) All text files are displayed with the ubiquitous *PPMore* program.

There are numerous articles on programming, ranging from basic Logo tutorials to an exceptionally scary piece on Artificial Intelligence (I think I need some just to understand that one!), and also covering subjects such as AMOS and a series on different programming languages.

The utilities included on the first disk include *Mighty Mouse* (a cursor- and screen-blanker), Imploder (a compression utility) and a number of others. There are music, games and artwork on the second disk; when you access them from the main menu, a Requester appears asking you to insert the correct disk.

The only problem that I had with *General Amiga* was that for some reason it displayed all the menus in greyscale, rather than colour, and that occasionally I experienced a software failure from *PPMore* or *Program Selector*. Still, this didn't detract too much from the overall impression I have of the magazine, which is that it's a well thought out, well put together piece of work.

General Amiga issue 12 is available at a reduced rate of £1.50. Issues thereafter will be £3 each. Send cheques to Ronnie James at 19 Earn Court, Alloa, Clacks, Scotland FK10 1PT.

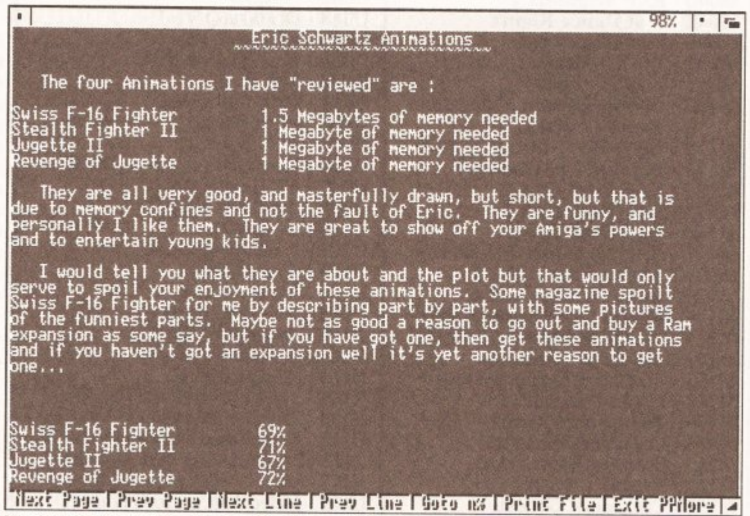
Value for money 8/10

VECTOR III

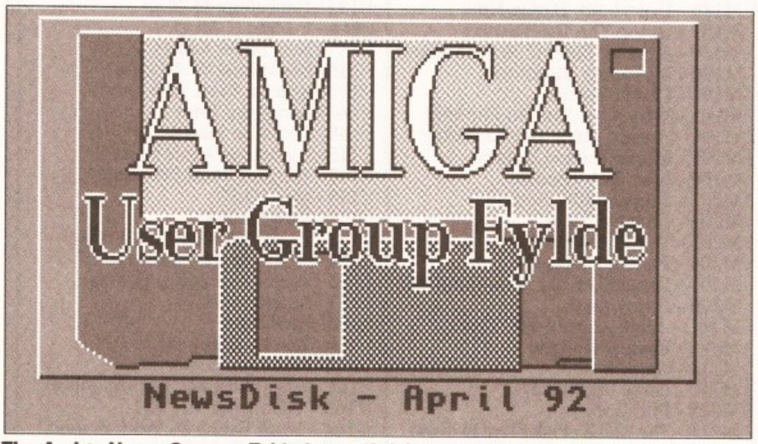
By the Amiga Beginners' Club

Vector loads with a couple of nice pieces of artwork and a sample advert – companies can advertise on the disk if they want. The disk contains the usual editorial and articles – reviews of the A500 Plus and various PD demos, plus a CLI tutorial and a feature on 'What exactly is public domain'.

There is a range of PD and shareware programs included, all



***Vector III*, from the Amiga Beginners' Club, includes articles, PD software and reviews, like this one, of PD**



The Amiga Users Group – Fylde has a thriving, monthly *NewsDisk* which is well worth checking out

accessible from the *MenuMaster* menuing system. These include *TextPlus*, *Virus Checker 5.26* and *Rollerpede*.

There is also a competition on the disk and, while the prizes aren't spectacular, it's nice to see a disk magazine doing something a little bit different.

Vector III is available by sending a cheque for £3 (that's £1 for the disk, and £2 for the shareware fee), made out to Amiga Beginners' Club, 110 Whitehill Park, Limavady, Co. Londonderry, Northern Ireland BT49 0QG.

Value for money 7/10

> ***"Modems are apparently coming down in price like a ferret down a hole..."***
> (*Err, yes... Ed*)

AUG NEWSDISK April 1992

By the Amiga Users Group – Fylde

The AUG Fylde seems to be a thriving organisation – the *NewsDisk* comes through the post regularly, and judging by the editorial on the disk, there's a lot going on in the Lytham St Annes area.

The articles have their own distinctive, and sometimes humerous style (modems, apparently, are coming down in price like a ferret going down a hole), and cover subjects such as 'Working with fonts', 'Starting out with MIDI' and 'Amiga Hard Disks'.

The disk contains a listing of the AUG's PD software library (all disks are just 75p each, plus £1 postage for however many you order), and some software; the April issue includes *ScreenX*, a screengrabbing utility, and the *QED* text editor. All the software on the disk is crunched with *Power-Packer*, which means that it automatically decompresses when you double-click on it.

To get the AUG NewsDisk, you need to become a member of the group. Annual membership is £15, and you can obtain a membership application form from A Wilkinson, 25 Glen Eldon road, Lytham St Annes, Lancashire FY8 2AX.

Value for money 7/10

THE REST...

There were a couple of other disk magazines sent in to me, which wouldn't work on my A500 Plus – which is why they aren't included here. I won't name them – at least one of the authors said that he thought his mag was compatible, but hadn't been able to check it. Perhaps he should, next time...

There was also a disk magazine sent to me which I can't review because of the nature of the material that it contained. A shame, because it was put together by four demo crews, apparently, and certainly looked stunning – visually by far the best disk magazine that I've seen.

continued on page 153

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continued from page 150

Perhaps when the guys involved realise that articles on drugs and (badly spelled, badly written) pornographic stories aren't likely to get much coverage in computer magazines they will change the content and give us a chance to see how good they really are.

SOFTWARE

POWER-PLANNER V1.1

Deja Vu software

Power-Planner is a licenseware program wirtten by Steven Rennocks, and is described as a 'life organiser' – in other works, it contains an appointments manager (diary to the rest of us) and a telephone directory program. It was written in AMOS, and is supplied on a self-booting disk which also includes *Diary checker*, a reminder program which checks the date when you boot up and lists any appointments that you've entered into *Power-Planner*.

The program does its job reasonably well, and I can't really find any cause for complaint – except that it wouldn't work properly with my screen grabbing utility: trying to use it caused the Amiga to crash, which doesn't bode too well for its stability.

Program rating 5/10

POWERBASE 2.10

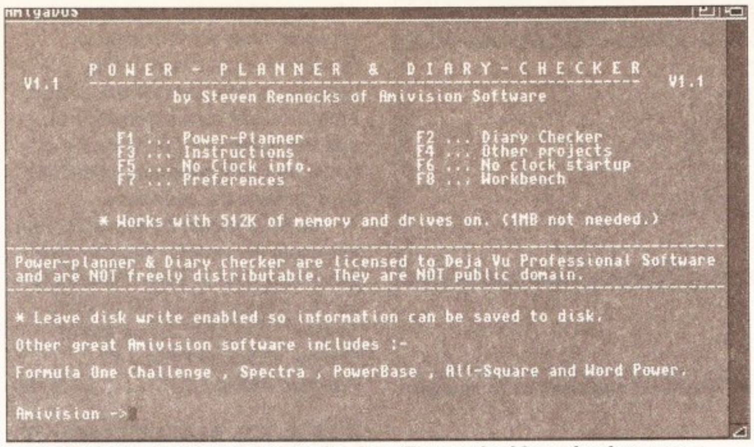
Deja Vu Software

PowerBase is a flat-form database and, like *Power-Planner*, is licenseware written in AMOS by Steven Rennocks. It is supplied on a self-booting disk which checks for boot block viruses before loading. It boots up with a Workbench 2-style shell, and configures the function keys to load the program or its doc files. The program requires 1Mb of RAM to run – but then, there can't be too many people who don't have 1Mb machines by now.

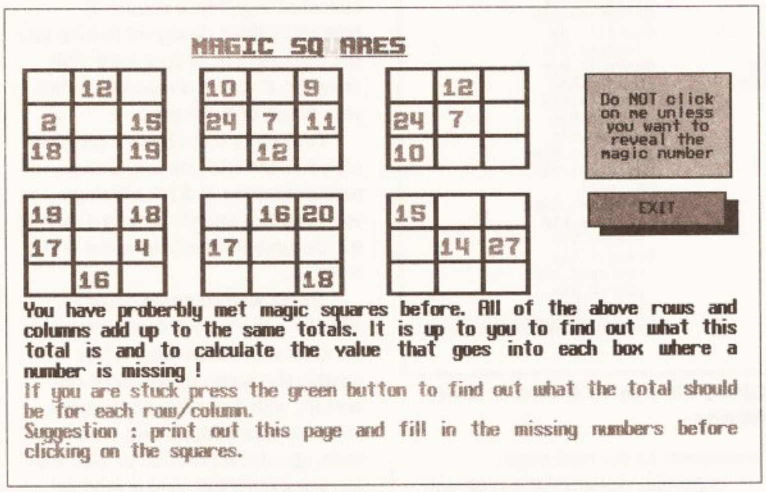
This really is a remarkably powerful program. The range of menu options is staggering, and it does take some time before you are fully conversant with how everything works. There are six menus, and each has more options than I've even seen on a similar program.

PowerBase has a video recorder-style control panel to allow quick navigation around a database, and has a scroll bar for even faster movement. Up to 10,000 records can be handled on a 1Mb Amiga, with up to 20 fields in each record. New fields can be added even after a database has been initially created, and various field types such as text, numeric, date, logical and external (any IFF picture) are supported.

You can filter the data – that is, only show the records in which you are interested – in a variety of ways,



***Power-Planner*, by Steven Rennocks, is a diary and address book program. Now all I need is a pocket-sized Amiga...**



***Calc 3.0* is supplied on the GCSE Module 1 disk. Not only will it perform in Scientific and Programmer modes, it also plots graphs**

and you can view the data in one of three ways: record, page and table. Like databases on more 'commercial' computers such as the PC and Mac, you can have as many different forms as you wish for each database, so you can output your records (to screen, file or printer) in exactly the required format.

Data can be password protected in one of two ways: read only access, and access to read and add records, but not delete them. Of course, you can turn password protection off at any time if you wish.

Of course, everything is not sweetness and roses (wouldn't life be boring if everything was perfect). As set up, *PowerBase* beeps and buzzes like crazy: every time you perform any action, the bloody thing bings to tell you that you've done it. Fortunately, there's a menu option which allows you to set the volume level: I imagine that most people will go for zero percent pretty quickly!

The other, more annoying problem is that if you use *PowerBase* from the self-booting disk supplied, strange things sometimes happen –

> **"GCSE Maths has been designed so that information is followed by questions on that subject area."**

like, quitting from the program seems to hang everything. My suggestion is that you copy the program to a hard disk if you have one, otherwise a 'standard' boot disk, and run it from there.

The program also doesn't seem to want to multi-task properly. There is no way of pulling down the screen to access the Workbench behind it: all you can do is click on the 'hide' gadget. Unfortunately, although this does get you back to the Workbench screen, I haven't yet worked out how to re-access the program. (And since Workbench itself is not included on the disk, this isn't much use. Finally, running a program like *ScreenX*, the screen-capture utility, before launching *PowerBase* results in a blank screen that means a system reboot. (That's why I haven't been able to produce any screengrabs of the actual program running – which is a shame, because it has a neat, easy-to-use interface.)

Now, this may all be down to the use of AMOS as the development language – but I really don't think so. I would urge Steven to try to cure these problems in the next release of the program – because when he does, *PowerBase* will undoubtedly be the best and most powerful database for under £100 on the Amiga. Even with the points mentioned above, I will be using it – it is streets ahead of *bBase*, the PD database that I have been using up until now.

Program rating 9/10

GCSE MATHS – Module 1

By John Blackett

John is a teacher of GCSE and A level maths, who found that there

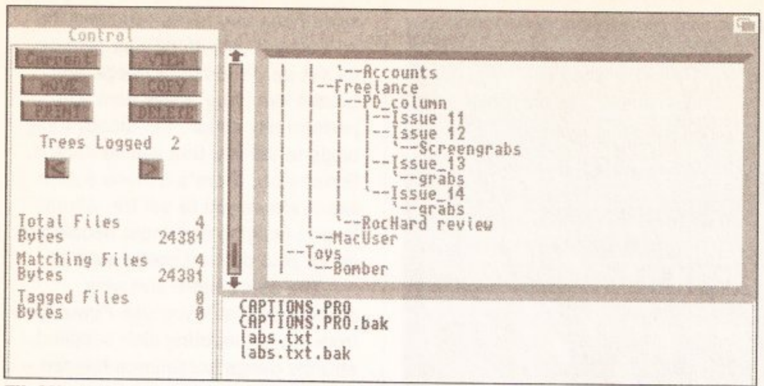
WHERE TO GET IT

There are two main ways to get hold of Amiga PD and shareware: from a bulletin board or from a PD library.

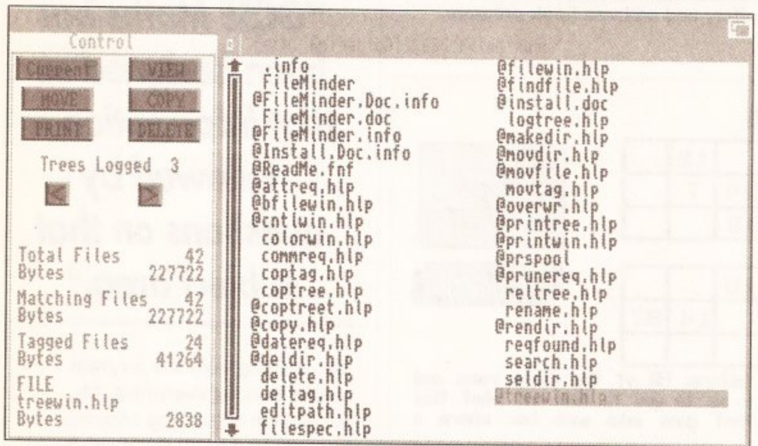
The advantage of using a bulletin board is that often the latest software is uploaded as soon as it's available. On the down side, you need a modem to connect, and you'll have to pay phone charges (and sometimes a connection fee to the bulletin board as well).

There are a growing number of bulletin boards with a wide range of Amiga software available for download. Check out 01-for Amiga (071 377 1358) and the Cheam Amiga Bulletin Board (081 644 8714). Another good option is joining CIX (the Compulink Information eXchange), which not only has Amiga software but also contains conference and file areas on a wide range of subjects, from politics to scuba diving, biking to science fiction. Many of the Amiga Shopper writers have accounts on CIX, so you can get first-hand advice on your problems, too. For more details, call CIX on 081 390 8446 (voice) or 081 390 1255 (modem).

If you don't want to use a bulletin board, the other way to get PD software is from a PD house. Many advertise in Amiga Shopper, and you'll find a comprehensive list of names and addresses at the end of this article. Expect to pay between 99p and about £2.50 per disk – there's often a discount if you buy in bulk, too.



***FileMinder* is a program similar to *XTREE* on the PC. It enables you to navigate easily around files**



In the large files window, files can be tagged (shown by an @ next to their names), for mass deletion, copying or whatever

was little in the way of GCSE software available for the Amiga. For this reason, he has produced Module 1 of what he hopes will be a series of disks. Module 1 covers arithmetic and measurement; Module 2 is being prepared at the moment, and will cover graphs and functions.

The disk contains the main program, and also a PD calculator called *Calc3.0*, by Jimmy Yang which John discovered and which, in both his and my opinions, is superb. It works in Scientific and Programmer modes, and will also plot graphs of scientific functions. It's worth getting hold of this disk just to get the calculator.

The disk autoboots – and, indeed, it needs to, since just putting it into the disk drive and double-clicking won't work unless you own *HyperBook* – since that's what the program is created in. Using the autobooting disk automatically launches the program after 30 seconds or so, and I'm sure that by disassembling the startup-sequence it would be possible to work out how to launch the program directly. It's just that I'm rather averse to having to work before I can use a program.

The content of GCSE 1 is created in *HyperBook*, which means that it's all based on the 'buttons' approach – click anything that isn't written in black text and something is likely to happen – either some extra information being revealed, or a movement to the next page.

John has designed the program so that some information on an area of the subject is followed by a set of questions on that subject area. This is a perfectly reasonable idea, made even better by the fact that there is a text file containing all the questions (but not the answers), so they can be printed out.

My only real complaint with *GCSE 1* is that the actual explanations are not always as clear as they could be – I found myself getting confused at times, so I'm sure that someone who didn't know the subject area at all would have some problems. Perhaps the best way for this program to be used is if the subject area is taught conventionally first, and the notes used by students at home as memory-joggers when they try to answer the questions.

GCSE 1 should be available from the usual PD outlets. You can also get a copy directly from the author: send a cheque for £1.50 to John Blackett, 32b St Nicholas Street, Bodmin, Cornwall PL31 1AD.

Program rating 6/10

FILE & HD MANAGEMENT

PD Soft V573

On disk V5734, PD Soft has collected together a couple of brilliant utilities designed to help you get the best out of your hard disk drive (or, if you're a real masochist, your floppy-only system).

First up is a shareware program called *FileMinder*, by Joel Swank – registration fee is $10, although you've got to search for some time in the documentation before you find that out.

Those who've come across *XTREE* on the PC will feel fairly much at home with *FileMinder*, it has roughly the same appearance on-screen, with a window containing some control buttons and some facts about the partition or disk that you are examining, and a window which shows a disk (or partition) in tree format, with drawers branching off.

From this main display, you have a number of options available. You can copy files and drawers, move them about, print them and delete files and drawers (deleting drawers is known as 'pruning' the tree). Forget *DirWork*, *SID* and the rest – for hassle-free file navigation and manipulation, *FileMinder* is a dream. Once you've displayed a tree, it is flagged as 'logged', and you can swap back and forth between it and any other logged trees; so you can, for instance, work on two different partitions of a hard disk at once. Logging a large disk can take time – a minute or two if you have a large hard disk – but once you've logged it, moving through the structure is instantaneous.

Files can be 'tagged' so that they can be moved, copied, deleted or whatever en mass; tagging is shown

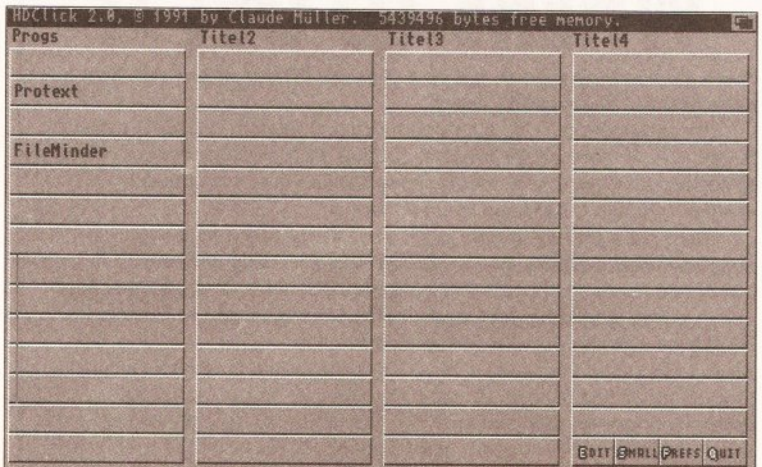
> ***"FileMinder now has pride of place on my hard disk."***

by a '@' symbol next to the filename. And if there are just too many files, you can select those whose names you want to view by giving a filename specification – for instance, if you say that the specification is '!*.info', the program will display everything except .info icon files. All of this is backed up by a comprehensive on-line help facility, accessed from the [Help] key.

Of course, it's not as if everything is perfect in *FileMinder*. For instance, although text files can be viewed, it would be great to be able to view IFF graphics as well; perhaps that will be in the next release? Also, the program is NTSC-only – which means that about a quarter of the screen is wasted. And the colours which the program boots up in are a little hard to read – although a quick pull down of a menu and that's soon taken care of. I'm really trying hard to think of something else to complain about here, because I don't want to sound too over-the-top about this program. Unfortunately, minor whinges about stuff like the colour of the windows are the only things I can think of.

I'm constantly uncovering file navigation utilities which are better than the previous ones I've been using. But I think that it will be a considerable time before I find anything new that's even half as good as *FileMinder*. It now has pride of place on my hard disk, and I really have no idea how I managed without it. Thoroughly recommended.

HDClick is a shareware application from Claude Mueller for launching programs and performing tasks. Basically, anything you can do from the Shell or from the Workbench screen can be done here, and in a far easier way, too.



***HDClick* is a utility for launching applications and performing tasks. Make this run automatically when your Amiga boots up, include *FileMinder* as one of the applications which it knows about and you may never need the Workbench again! Here we've only just started to set it up, with only a couple of applications so far...**

continued on page 156

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Essentially, it consists of a screen containing 55 buttons, each one of which can be customised to perform a task such as running a program, printing a directory listing or even jumping to a whole new page, with 55 new buttons.

The idea is that you customise the buttons to perform your usual tasks – say, running your favourite programs, compressing files in a 'to be compressed' drawer on the RAM disk or whatever, and then set your Amiga to launch *HDClick* automatically when you boot up. If you do this, and include a file navigation utility like *FileMinder* (the rather excellent program reviewed above), then it's likely that you'll hardly ever need to use the Workbench screen at all. This is excellent for those of us who feel that we've more to do with our time than open a million windows to find that application.

On the down side, the documentation file isn't the easiest to get your head around: although the translation from German is good, the writing style is a little heavy-going, and would perhaps have benefitted from a native English speaker having a go at it. Customising the buttons is also not totally intuitive: you have to specify what action is taken to the file that you specify should be launched: should it be Executed, Run or Launched? This could cause the novice considerable confusion, and was the subject of quite a bit of trial and error on my part, before I properly got the hang of it. I found that the best thing to do was to study the example configuration file supplied, which has buttons to do virtually everything that you might want. Just copy the examples, replacing the author's hard disk path names with your own, and Bob's your aunty's live-in lover. Incidentally, one nice touch is that you don't actually have to specify the path-name of a file if you don't want; there's a button which brings up a standard file Requester. Select the file from that and the program automatically inserts the correct path name for you. This is the kind of feature that every program should have – making life easier for the user, without sacrificing functionality for die-hard propellor-heads.

Together, *FileMinder* and *HDClick* are a great pair of applications. Even if you don't use *HDClick*, *FileMinder*'s ease of use has to be seen to be believed. And if you're a novice, it would pay you to sweat over *HDClick* for a while, customise it to your liking and then forever ignore the Workbench and (even worse) the Shell. I can't recommend this disk too highly; at the risk of repeating myself, *FileMinder* is *brilliant*!

Value for money 10/10

SEE YOURSELF IN PRINT

That's all, folks! The end, once again, is nigh. If you have found any PD that you think is worthy of review – or if you've written any yourself that you want to publicise – then write to me, Ian Wrigley, c/o *Amiga Shopper*, Future Publishing, 30 Monmouth Street, Bath BA1 2BW. Or contact me as 'iwrigley' on CIX, 100016,320 on CompuServe or 'iwrigley@cix.compulink.co.uk' on the Internet.

COMING NEXT MONTH • COMING NEXT MONTH

Next issue, I'll be looking at some more hard disk management tools, and – assuming I can work out exactly how the damned thing works by then – presenting a tutorial on a combined spreadsheet and relational database to be found on one of the Fred Fish disks. It looks like it could be superb, but the supporting documentation files are less than crystal clear. So let me sweat over them for you; all you have to do is read next month's PD World.

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☎ 0709 571748

EdLib
Scotland Farm, Stockwood Road
Brislington
Bristol BS4 5LU
☎ 0272 723489

EMPDL
54 Watnall Road
Hucknall
Nottingham NG15 7LE
☎ 0602 630071

Essex Computer Systems
118 Middle Crockerford
Basildon
Essex SS16 4JA
☎ 0268 553963

George Thompson Services
Cucumber Hall Farm,
Cucumber Lane
Essendon
Herts AL9 6JB
☎ 0707 664 654

Goldstar Computers
PO Box 2
Tyldesley
Manchester M29 7BN
☎ 0942 895320

ICPUG
PO BOX 1309
London N3 2UT
☎ 081-346 0050

Kernow Software PD Library
51 Ennors Road
Newquay, Cornwall

NBS
1 Chain Lane, Newport
Isle Of Wight PO30 5QA
☎ 0983 529594

Neural Images
4 Flint Walk, Hartlepool
Cleveland TS26 0TE
☎ 0492 263508

Office Choice (OC-PD)
30 Town St, Kirkintilloch
Glasgow G66 1NL
☎ 0236 737901

PD Soft
1 Bryant Ave, Southend-On-Sea
Essex SS1 2YD
☎ 0702 612259

Pentire PD
10a Hag Hill Lane, Taplow
Maidenhead, Berks SL6 0JH
☎ 0628 666641

Public Dominator
PO BOX 801, Bishop's Stortford
Herts CM23 3TZ
☎ 0279 757692

Riverdene PDL
30a School Road
Tilehurst, Reading
Berkshire RG3 5AN
☎ 0734 452416

Telescan Computer Services
Handsworth Road
Blackpool FY5 1SB
☎ 0253 22296

Sector 16
160 Hollow Way, Cowley, Oxford
☎ 0865 774472

Seventeen Bit Software
PO BOX 97, Wakefield
West Yorks WF1 1XX
☎ 0924 366982

Software Expressions
Hebron House, Sion Road
Bedminster
Bristol BS3 3BD
☎ 0272 637634

Softville
Unit 5, Stratfield Park
Elettra Avenue,
Waterlooville
Hants
PO7 7XN
☎ 0705 266509

Start Computer Systems
Barbican House
Bonnersfield
Sunderland, SR6 0AA
☎ 091 564 1400

Startronics
4 Arnold Drive, Droylsden
Manchester M35 6RE
☎ 061 370 9115

Unique Computing
114 Salters Road, Gosforth
Newcastle on Tyne, NE3 3UP
☎ 091-284 7976

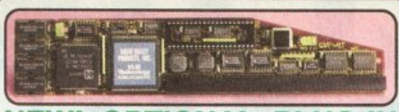
Vally PD
PO BOX 15, Peterlee
Co Durham SR8 1NZ
☎ 091-587 1195

Wirral PD
PO Box 4, Birkenhead
Merseyside L43 4FW
☎ 051 651 0646

GVP
GREAT VALLEY PRODUCTS

QUALITY AMIGA PERIPHERALS WITH A 2 YEAR WARRANTY

Silica Systems are pleased to present the GVP range of peripherals. GVP are the world's largest third party manufacturer of peripherals for the Amiga range and have a reputation for high specification, quality products. The company was founded only four years ago by a man who understands the Amiga - Commodore's ex-Vice President of Technology. He, along with a team of Amiga experts including other ex-Commodore staff, understand the add-on requirements of Amiga owners better than anyone. Not only do GVP provide peripherals that Amiga owners want, they also offer peace of mind, with a 2 year warranty on the products they manufacture. So, if you are looking for the very best in Amiga peripherals, look no further than GVP.



NEW! OPTIONAL PLUG-IN 16MHz PC286 EMULATOR

- 16MHz 80286 processor
- 287 Maths Co-Processor socket
- 512K of PC RAM plus the use of Amiga RAM
- Supports Hercules, CGA, EGA/VGA (monochrome) and T3100 video modes
- Runs MS-DOS (3.2 and upwards) plus thousands of other PC programs

This powerful 286 emulator module simply plugs into the "mini-slot" of the GVP HD8+ or A530 (without invalidating the warranty). The emulator has full access to the Amiga's resources and allows you to run PC and Amiga programs at the same time, giving you two computers in one.

£249 Ref: EMU 0500

52Mb HARD DRIVE

FOR THE AMIGA 500

INCLUDES MANY UNIQUE FEATURES NOT FOUND IN ANY OTHER AMIGA DRIVES



- **52/120/240Mb LIGHTNING QUICK HARD DRIVES** New State-Of-The-Art 1" internal SCSI Quantum hard drives, with a 1,100K per second (11ms) transfer rate making this the fastest hard drive available for the Amiga.
- **LEADING EDGE TECHNOLOGY** High-tech custom VLSI, Faaast ROM chips and DMA design, ensure that no other Amiga hard drive will out perform the GVP HD8+.
- **8Mb RAM SOCKETS - UNPOPULATED** Inside every drive there are sockets to expand the Amiga's RAM by 8Mb.
- **USES EASY-TO-FIT 1Mb/4Mb SIMMs** Memory upgrades. Please order MEM 3632 at £39.95 per Mb (2Mb jumps only), up to 4Mb. To upgrade to 8Mb, please order 2 MEM 3849 at £199.95 per 4Mb SIMM.
- **CUT-OF SWITCH FOR GAMES** Features a special games switch to 'cut off' the drive for games that won't work with a hard disk. Most other drives require unbolting from the Amiga.
- **"MINI SLOT" EXPANSION** This unique slot has been built-in to allow expansion to be made without using any risky 'pass-through' techniques. See PC286 emulator above.
- **EXTERNAL SCSI PORT** Add up to 6 external SCSI devices, e.g. CD-ROM, tape streamers, additional hard drives, removable media, scanners, etc.
- **DEDICATED PSU + FAN** Following Commodore's strong recommendations, the GVP HD8+ is supplied with its own external power supply and cooling fan.
- **FULLY COMPATIBLE** Fully compatible with all Amiga 500's (inc. PLUS) and versions of Kickstart.
- **FREE 2 YEAR WARRANTY**

WHAT THE PRESS SAY ......

'Superb build, excellent aesthetics and blinding speed make this the best A500 hard drive' ... - AMIGA SHOPPER
'GVP claims this is the fastest hard drive in the world and none of our tests could prove that wrong.' - AMIGA SHOPPER
'Overall: Untouchable. THE choice' - AMIGA SHOPPER
'Still the best hard drive' ... 92% - AMIGA FORMAT

120Mb **£499** REF: HAR 0920
240Mb **£799** Available 5/92 REF: HAR 0942

GVP HD8+ 52Mb HD **£379**
ALL PRICES INCLUDE VAT Ref: HAR 0852

A530 ACCELERATOR

- 40MHz 68030EC processor
- Hi-speed SCSI interface with 52, 120 or 240Mb hard drive
- 1Mb Populated, Accommodates up to maximum 8Mb of 32-bit wide RAM
- Optional 68882 Maths Co-Processor
- Optional PC-AT emulation



FOR THE AMIGA 500

ACCELERATOR + HD + RAM UPGRADE

Plugging a GVP A530 Accelerator onto your A500 or A500 Plus will boost its speed from 7.14MHz to a blistering 40MHz. The A530 will be available with either 52, 120 or 240Mb hard drive and can be upgraded to include an additional maths Co-Processor, 8Mb of 32-bit wide FAST RAM and much more through GVP's unique "mini-slot".

40MHz-1Mb RAM/52Mb HD	Ref: HAR 0962	£749
40MHz-1Mb RAM/120Mb HD	Ref: HAR 0974	£899
40MHz-1Mb RAM/240Mb HD	Ref: HAR 0986	£1099

ALL PRICES INCLUDE VAT - DELIVERY IS FREE OF CHARGE IN THE UK MAINLAND

FOR ALL AMIGAS



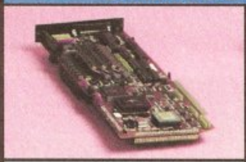
SOUND SAMPLER

- *8-bit stereo sampler*
- *Plugs into parallel port*
- *MIDI support for song input*
- *Extensive editing features*
- *Works with all Amigas*

A low-cost sound and music solution for the semi-professional and audio hobbyist. It consists of a small, high quality 8-bit stereo sound sampler that connects into the parallel port on any Amiga 500, 1500, 2000 or 3000 computer. Combined with one of the fastest, most powerful and easy-to-use sound and music editing programs available. Includes 4-track soundtracker file compatible sequencer.

MUS 2500 **£59.95**

AMIGA 1500 + 2000 + 3000 PRODUCTS



G-FORCE 30-25/40/50

- *68030EC/68030EC/68030 processor*
- *25/40/50MHz clock speeds*
- *68882 Maths co-processor*
- *Expands to 13/16/16Mb 32-bit RAM*
- *32-bit SCSI controller on board*

These fast 68030/68030EC accelerators with memory upgrade and SCSI interface board deliver uncompromising speed and performance without the high price. Each board comes complete with a 68882 maths co-processor and RAM upgrade as standard. Hard Disk Mount Kit available, to mount 1" Hard Drive on any G-Force 030 Board, GVA 4251, £39.95

25MHz/1Mb	Ref: UPG 0110	£599
40MHz/4Mb	Ref: UPG 0430	£999
50MHz/4Mb	Ref: UPG 0533	£1399



IMPACT II HC8

- *Factory installed Hard Drives*
- *52, 120, 240 & 420Mb options*
- *On-board 8Mb memory sockets*
- *Add up to 6 additional SCSI devices*
- *Easy to install SIMMS*

These are the equivalent of the HD8+ hard drive, but for the 1500 and 2000 models. Not only are they some of the fastest hard drives available, but they also incorporate an unpopulated 8Mb RAM expansion board.

52Mb	Ref: HAR 1352	£299
120Mb	Ref: HAR 1420	£449
240Mb	Ref: HAR 1540	£699
420Mb	Ref: HAR 1542	£1299

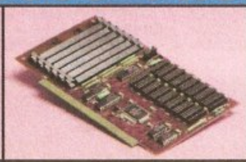


IMPACT VISION 24

- *768 x 580 PAL Resolution*
- *Supports composite video, S-VHS and RGB signals*
- *Broadcast quality genlock*
- *Now with RGB splitter*

This is the very latest 24-bit Professional Video Adaptor. It features 16 million colours on screen at once, built-in genlock, flicker fixer, frame buffer, frame grabber and digital keyer. Impact Vision 24 comes supplied with Caligari-IV24 3D modelling and rendering software, Scala IV24 video titling software, plus Macro Paint 24-bit paint package. A1500/2000 requires additional adaptor, GVA 5224, £49.95

VID 7024 **£1699**



RAM 8

- *Up to 8Mb of FAST RAM*
- *Upgrade in 2Mb increments*
- *Supports industry standard RAM chips*
- *Diagnostic software included*
- *Fully auto-configuring*

A simple and convenient 8Mb RAM expansion board for the Amiga 1500 and 2000. Using industry standard RAM chips, the RAM-8 offers an easy way to upgrade your 1500 or 2000 in 2Mb increments. The RAM 8 is fully auto-configuring and is supplied with peace-of-mind diagnostic software. 6Mb configuration supported for bridgeboard owners

RAM 2800	0Mb populated	£99
RAM 2802	2Mb populated	£169



SYQUEST 44/88Mb

- *44 or 88Mb removable media*
- *20ms access time*
- *Can be supplied with or without GVP HC8 Controller*
- *External case available for A500 or A3000 users*

GVP are now offering Syquest drives with or without their HC8 controller. They are available in 44 and 88Mb capacities and have a 20ms access time. Each drive comes complete with one removable cartridge. Syquest drives give complete storage flexibility, offering a quick and easy way to add extra storage to your system.

44Mb (Bare Drive)	Ref: HAR 1554	£449
44Mb (+HC8)	Ref: HAR 1568	£549
88Mb (Bare Drive)	Ref: HAR 1678	£599
88Mb (+HC8)	Ref: HAR 1691	£699

SILICA SYSTEMS OFFER YOU

- ***FREE OVERNIGHT DELIVERY:*** On all hardware orders shipped in the UK mainland.
- ***TECHNICAL SUPPORT HELPLINE:*** Team of technical experts at your service.
- ***PRICE MATCH:*** We normally match competitors on a "Same product - Same price" basis.
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- ***FREE CATALOGUES:*** Will be mailed to you with offers and software/peripheral details.
- ***PAYMENT:*** By cash, cheque and all major credit cards.

Before you decide when to buy your new Amiga products, we suggest you think very carefully about WHERE you buy them. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. We have been established for over 12 years and, with our unrivalled experience and expertise, we can now claim to meet our customers' requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Systems Service".

MAIL ORDER HOTLINE **081-309 1111**

SILICA SYSTEMS

MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-309 1111**
Order Lines Open:	Mon-Sat 9.00am-6.00pm	No Late Night Opening	Fax No: 081-308 0608
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA		**Tel: 071-580 4000**
Opening Hours:	Mon-Sat 9.30am-6.00pm	No Late Night Opening	Fax No: 071-323 4737
LONDON SHOP:	Selfridges (1st Floor), Oxford Street, London, W1A 1AB		**Tel: 071-629 1234**
Opening Hours:	Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Extension: 3914
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-302 8811**
Opening Hours:	Mon-Sat 9.00am-5.30pm	Late Night: Friday until 7pm	Fax No: 081-309 0017

To: Silica Systems, AMSHP-0792-75, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON THE GVP RANGE

Mr/Mrs/Miss/Ms: .... Initials: .... Surname: ....

Address: ....

.... Postcode ....

Tel (Home): .... Tel (Work): ....

Company Name (if applicable): ....

Which computer(s), if any, do you own? 75B

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

PRODUCT LOCATOR

PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN

Welcome to the *Amiga Shopper* Buyer's Guide, your regular guide to what's hot and what's not in the Amiga market place. It's designed as a simple-to-use yet comprehensive guide which will help you to make the right buying decisions. The Buyer's Guide will run each and every month and as new products are released and others discontinued, we'll be updating it accordingly. This month we bring you what is possibly the most comprehensive guide to software for the Amiga owner which is all available in the public domain. It may not include each and every PD product ever produced for the Amiga (that would take up virtually the whole of *Amiga Shopper*!), but rest assured that all the major titles are here.

BUSINESS SOFTWARE

Program	Library	Disk	Type	Issue	Rating
TextPlus 3.0	PDSoft	V261	Word processor	1	****
TextEngine 3.0	Digitz	277	Word processor	13	***
WordWright	PDSoft	V28	Word processor	13	****
AZSpell	Digitz	Utl277	Spell checker	13	****
PowerSnap	Fred Fish	542	Grab screen text as ASCII file	8	*****
UEdit	AmigaNuts	1162	Text editor	8	****
AmigaFox	Office Choice	U173	Combine text with graphics	8	**
AmiBase Pro 3	AmigaNuts	–	Powerful database	9	****
Liner	Fred Fish	285	Ideas processor like Flow	10	****
NewPRT	Digitz	149	Printer drivers for PageStream	10	****
PageStreamFonts	Digitz	149	Fonts for PageStream	10	*****
EasyBanker	GTS	Home2	Home finance program	10	****
HomeHelp	GTS	Home1	Computerised grocery lists	10	****
I-Man	GTS	Home2	Inventory list management	10	***
MultiPlot	Fred Fish	467	Data graphing program	7	****

MUSIC UTILITIES

MED 3.11	AmigaNuts	973	Sound Tracker	1	*****
Module Processor	AmigaNuts	864	Convert modules to executable	1	***
Rippers Disk	17Bit	1055	Rip modules from memory	5	****
Sound Ed	Fred Fish	486	Sample editor	5	****
Module Master	TBAG	58	Play modules in various formats	9	****
K1 Editor	Fred Fish	332	Patch editor for Kawaii K1	10	*****
CZED	Fred Fish	223	Patch editor for Casio synths	10	*****
IBEM	VirusFree	1485	PC compatibles	3	****

EMULATORS

Program	Library	Disk	Machine	Issue	Rating
A64	AmigaNuts	1030	Commodore 64	3	*****
ST Emulator	Digitz	Utl149	Atari ST	15	***
QL Emulator	AmigaNuts	1030	Sinclair QL	3	***
ZX Emulator	AmigaNuts	1030	ZX Spectrum	3	****

VARIOUS UTILITIES

Program	Library	Disk	Type	Issue	Rating
A-Gene	AmigaNuts	933	Geneology program	1	****
Command.COM	17Bit	866	CLI commands in RAM	2	***
MessySID 2	PDSoft	V490	Access PC disks with ease	13	*****
Elements	Fred Fish	593	Periodic table of elements	13	****
Cass 1.1	Fred Fish	579	Make your own cassette covers	13	***
Badger	Fred Fish	543	Event scheduler	13	***
School TimeTable	AmigaNuts	1100	Generate school timetables	5	***
Arq	CIX Download	–	Improved system requesters	8	*****
LC24-200 Fonts	NBS	L503	Fonts for Star printers	8	****
Menu Runner	AmigaNuts	1024	Run programs from menu	8	***
ButExchange	Fred Fish	494	Reverse mouse buttons	9	****
DeafLab	Fred Fish	494	Sign language utility	9	***
PWKeys	Fred Fish	494	Manipulate windows with hotkeys	9	***
InputLock	Fred Fish	494	Turn off mouse and keyboard	9	****
RunMe	AmigaNuts	1186	Run programs from menu	9	*****
Hard Drive Special	GTS	–	Collection of hard drive utils	9	*****
ScreenMOD	TBAG	58	Modify screens and windows	9	***
Words 3	AmigaNuts	–	Solve anagrams	9	***
ClockTick	TBAG	58	2.0-like clock mouse pointer	9	****
FileSearch	Fred Fish	531	Find files on a hard disk	11	***
Format 1.1	Fred Fish	535	Replacement disk formatter	11	*****
PowerPacker Utils	Fred Fish	542	Utilities for PowerPacker	11	***
LabelMaker	Fred Fish	548	Create disk labels	11	***
ToolsDeamon	Fred Fish	561	Run programs for 2.0 Tools menu	11	****
Filer	Fred Fish	562	SID clone for Workbench 2.0	11	****
AWP	Fred Fish	554	Animate WB2.0 clock pointer	11	****
RMBShift	Fred Fish	547	Select multiple icons	11	****
Smart Icon	Fred Fish	316	Iconifies windows	10	***
Flash Disk	GTS	Utils2	Disk optimizer	10	****
Snap 1.4	Fred Fish	326	Grab screen text into clipboard	10	****

PRODUCT LOCATOR

SysInfo	Fred Fish	571	System information program	11	*****
MKSLens	Fred Fish	574	Magnify area of screen	11	***
Font Manager	Digitz	149	Manage your bitmap fonts	10	****
Recover	Digitz	149	Rescue files from corrupt disks	10	***
Track Display	GTS	Utils1	Shows position of drive heads	10	***
FastDiskII	GTS	Utils1	Disk optimizer	10	***
FileMaster	GTS	Utils1	Binary file editor	10	*****
DiskSpeed	GTS	Utils1	Disk drive benchmark program	10	****
Formatter	GTS	Utils1	Replacement disk formatter	10	***
SetNoClick	GTS	Utils1	Turn off annoying drive click	10	***
DevRen	GTS	Utils1	Rename devices including DF0	10	****
LockDevice	GTS	Utils1	Better AmigaDOS 'Lock' command	10	****
Label Print	Fred Fish	227	Disk label printer	10	***
Banner	TBAG	52	Print huge banners	10	****
Avail Mem	Fred Fish	285	Graphical memory monitor	10	***
DCopy	AmigaNuts	700	Disk copier	10	****
MessyDOS	NBS	U619	Read and write PC disks	6	*****
Master Virus Killer	AmigaNuts	971	Virus killer	1	****
Imploder	Fred Fish	422	File compressor	7	***
ARTM	17Bit	1274	System monitor	7	*****
COMMS UTILITIES					
LHA 1.11	Fred Fish	593	Archiving utility	13	****
Phone Line Watcher	TBAG	58	Keep track of phone bill	9	****
Term 1.8A	Fred Fish	534	Terminal Program for WB2.0	11	*****
NComm	17Bit	1275	Terminal Program	7	****
PROGRAMMING UTILITIES					
DICE	Fred Fish	443	C Compiler	3	*****
Copper Master	AmigaNuts	1083	Generate Copper Lists	5	***
BRef	Fred Fish	494	BASIC cross referencing utility	9	****
Power Logo	EdLib	24	Enhanced Logo Interpreter	9	***
MIDI Library	Fred Fish	227	Program MIDI applications	9	*****
PCQ Pascal	AmigaNuts	1113	Pascal compiler	6	****
NorthC	AmigaNuts	1112	C Compiler	6	****
Acc Assembler	AmigaNuts	–	Fast Assembler	6	*****
GRAPHICS UTILITIES					
SpectraPaint	Slipped Disk	19	Paint package	3	****
Deluxe Draw	Slipped Disk	18	Paint package	3	**
AMOS Paint	Deja Vu	83	Paint package	3	***
HAMLab	AmigaNuts	1149	Image processing	3	**
3DFont	17Bit	1007	Text to Sculpt Object	3	***
SkyPaint	TBAG	37	Text-based graphics	3	***
SlideShow Kit	VirusFree	1465	Create your own slideshows	3	****
Mandel Mountains	Softville	751	Creates 3D Mandelbrots	5	****
3D Objects Disk 1	AmigaNuts	–	Collection of Sculpt Objects	8	****
PictSaver	Fred Fish	543	Grab screens in IFF Format	9	*****
LandBuild	AmigaNuts	1190	Fractal landscape generator	9	**
Video Text Displayer	AmigaNuts	1199	Basic text scroller	9	***
Converters	17Bit	1221	Image conversion tools	9	***
Vector Designer	AmigaNuts	–	Vector graphics designer	9	**
Plasma	Fred Fish	573	Fast fractals program	11	***
BezSurf 2	Fred Fish	315	Create shaded 3D objects	10	***
DrawMap	Fred Fish	315	Generate maps of the world	10	***
Sprite Designer	AmigaNuts	1102	Create animated sprites	6	**
ImageLab	PDSoft	V518	Image processing program	12	****
EDUCATIONAL SOFTWARE					
Learn&Play	Riverdene	Mis637	Maths/Reflex/Logic	5	****
Simon	Deja Vu	APD135	Reflex/Memory	5	***
Space Maths	Deja Vu	APD135	Maths	5	****
TouchStones	Deja Vu	LPD18	Logic	5	****
Shapes	Riverdene	GAM907	Maths/Logic	5	****
Quingo	Deja Vu	LPD21	3 'R's	5	***
Treasure Search	Deja Vu	APD2	Maths/Logic	5	***
JigMania	Deja Vu	LPD13	Maths/Logic	5	****
Spell4Fun	AmigaNuts	1146	Spelling	9	****
Maths4Fun	AmigaNuts	1146	Maths	9	****
XTables	AmigaNuts	1146	Maths	9	*****

FOR SUPPLIER INFORMATION ON ALL THE PRODUCTS LISTED ABOVE SEE UK PD HOUSES PAGE 156

BUYING ADVICE FOR SHOPPERS

Whether buying over the phone or at a local store, here's our advice on how to get what you want

BUYING IN PERSON

- Where possible, always test any software and hardware in the shop before taking it home, to make sure that it works properly.
- Make sure you have all the necessary leads, manuals or other accessories you need.
- Don't forget to keep your receipt.

BUYING BY PHONE

- Be as clear as possible when stating what you want to buy. Make sure you confirm all the technical details of what you are buying. Some things to bear in mind are version numbers, memory requirements, other required hardware or software and compatibility with your particular model of Amiga (that is, make sure you know which version of Kickstart you have).
- Check the price you are asked to pay, and make sure that it's the same as the price advertised.
- Check that what you are ordering is actually in stock.
- Check when and how the article will be delivered, and that any extra charges are as stated on the advert.
- Make a note of the date and time when you order the product.

BUYING BY POST

As with buying by phone, you should clearly state exactly what it is you are buying, at what price (refer to the magazine, page and issue number where it's advertised) and give any relevant information about your system set-up where necessary. You should also make sure you keep copies of all correspondence both to and from the company concerned.

MAKING RETURNS

Whichever method you buy by, you are entitled to return a product if it fails to meet any one of the following three criteria:

- The goods must be of 'merchantable quality'.
- The goods must be 'as described'.
- The goods must be fit for the purpose for which they were sold.

If they fail to satisfy any or all of the criteria, then you are then entitled to:

- Return them for a refund.
- Receive compensation for part of the value.
- Get a replacement or free repair.

When returning anything, ensure that you have proof of purchase and that you return the item as soon as possible after receiving it. For this reason it is important that you check the hardware or software as soon as it is delivered to make sure everything you ordered is there and works as it is supposed to.

HOW TO PAY

Paying by credit card is the most sensible way, whether buying in person, by post or on the phone, because you may be able to claim the money from the credit card company even if the firm you ordered from has gone bust or refuses to help sort out your problem.

Otherwise, you should pay by crossed cheque or postal order – never send coins or notes through the mail.

GETTING REPAIRS

Always check the conditions of the guarantee, and servicing and replacement policy, so that you know what level of support to expect. Always fill in and return warranty cards as soon as possible, and make sure that you are aware of all the conditions contained in the guarantee.

BUYING PD

Even though PD software is relatively inexpensive, you should still apply the guidelines set out above, making sure that you confirm all orders as clearly as possible.

Shopping around is still important when buying PD because different houses charge different prices for the same disks. There is no set pricing structure for disks, but bear in mind that PD houses are, in theory, supposed to be non-profit making operations. AS

A CHECK LIST FOR MAIL ORDER BUYING

1 **Make sure you know exactly what you want. Draw up a checklist of the specifications you are looking for and what you want it to be able to do. Check with the suppliers that their product matches your list**

2 **Will the product you have in mind work with your existing set-up, and anything else you are planning to buy?**

3 **Can you see a demonstration? Many products are on display at computer shows around the country.**

4 **Are there any hidden extras? Does it need 1Mb to run, or a hard disk?**

5 **What technical support is provided by the supplier? Does the manufacturer offer after-sales advice? Check before you buy.**

6 **Check the guarantee terms. How long is the free warranty? What does it offer?**

7 **Draw up a list of these details and make them a condition of your order.**

8 **Check the price and delivery details when you order, and make a note of them.**

9 **Note down when you placed the order and who you spoke to.**

10 **When it arrives, check everything carefully. if anything is missing, don't use the product at all – contact the supplier. If it doesn't work, make the obvious checks such as the fuse. If it still doesn't work don't try to fix it – contact the supplier.**

ADVERTISERS INDEX

WIN • WIN • WIN • WIN • WIN • WIN • WIN • WIN

£500 of expansion is up for grabs!

Those wonderful people at Cumana have donated 10 COM-201 memory and hard disk controller expansion units to be given away

OK, who wants to expand their Amiga? Just about all of you, right? Well, now we're giving you the opportunity to do it for nothing more than the price of an envelope and a stamp.

That's right – ten lucky winners are going to be plugging a Cumana COM-201 in to where it counts. These nifty little units, each worth £49.95, fit in the Amiga 500's trapdoor, providing an extra 0.5Mb RAM, a battery backed-up clock and an ST506 hard disk interface.

This could be the start you've been waiting for. This is your chance to win your very own dream Amiga system: extra memory – well, everyone needs extra memory, no question about that – and a hard disk interface, ready to propel you from the quagmire of endless disk swapping into the world of high-speed, high-powered data transfer. Note that although the COM-201 is compatible with all versions of Kickstart, it will only work with an Amiga 500 (not an A500 Plus).

Is your mouth watering already? OK, well calm down, because you're going to need all your wits about you to answer the three tricksy little problems to the right.

Once you think you've solved these wondrous mysteries, jot your answers down (in true *Blue Peter* style) on a postcard or the back of a sealed envelope, and send them to:
Cumana Caper
Amiga Shopper
29 Monmouth Street
Bath BA1 2DL
The closing date is July 6. Note that only one entry will be accepted per household. AS

THE CHALLENGE

QUESTION 1
What does RAM stand for?
a) Real time Added Memory
b) Random Access Memory
c) Relative Addressing Management

QUESTION 2
If a clock was accelerated close to the speed of light, to a stationary observer would it appear to run...
a) more slowly
b) faster
c) at the same speed

QUESTION 3
Which computer first made use of the ST506 interface?
a) the Cray 1
b) the Sinclair Spectrum
c) the IBM PC



Cumana's COM-201 expansion fits into the Amiga 500's trapdoor, supplying an extra 0.5Mb of RAM, a battery backed-up clock and an ST506 hard disk controller – it's a damned fine piece of kit, and no mistake

THE CHAMPION!

In a shock announcement this month the *Amiga Shopper* editorial team named the winner of the April competition: Simon Snell of Cornwall, who will be receiving a GVP Impact drive kindly donated by Gordon Harwood Computers.

CALLING ALL GFA BASIC WINNERS

(or, it's the *Amiga Shopper, You're fired – Ed, admin cock-up corner*)
If you were one of our GFA Basic winners, could you please get in touch with your full names and addresses as soon as possible.

IN NEXT MONTH'S ISSUE

***A Shopper Special*:**
200 Top Amiga Tips
20 pages of essential information and advice you just can't do without

You can't afford to miss it!
On sale Thursday, July 2

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GVP Series 2 HD (A500)



Up to 8MB Fast RAM on board

52QMB 0MB **£369**	105QMB 0MB **£479**
52QMB 2MB **£419**	105QMB 2MB **£529**
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52QMB 8MB **£599**	105QMB 8MB **£719**

GVP A530 Turbo HD (A500)

40MHz 68030EC accelerator
Optional 68882 maths co-processor
Up to 8MB 32-bit Fast RAM on board
68882 Upgrade kit **£239**
52MB 0MB **£729** 105MB 0MB **£869** 240MB 0MB **£1069**

GVP Series 2 HD

Up to 8MB Simm RAM on board
Supports external SCSI devices
For A1500/A2000
Bare **£199**

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52QMB 8MB **£469**	105QMB 8MB **£749**

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68030 Accelerator board
68882 Maths co-processor
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Hard drive mount kit **£35**

GVP A2000 RAM Expansion

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High quality 8-bit sampler
Sample up to 51,000 samples/sec
Works on any Amiga **£55**

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New style case with built-in power supply
High power cooling fan
SCSI ID switch for instant ID switch
25-way & 50-way SCSI ports (one may used as thru'port)
Compatible with all major SCSI controllers
Up to 128MB on each removable cartridge
Compatible in speed with many hard disks
128MB HD (internal fitting) **£999**
128MB HD (external cased) **£1199**
128MB 3½" optical cartridge **£39.95** each
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Compatible with Amiga, PC, Mac. A SCSI controller is required on the Amiga and PC

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25MHz Motorola 68040
Built-in maths co-processor
Expandable up to 32MB of RAM
Software compatible with 68000 processors

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4MB RAM **£1569**	32MB RAM **£2525**
8MB RAM **£1689**	

Nexus Hard Card

Up to 8MB RAM on board
For A1500/2000
Bare **£199**

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52QMB 2MB **£339**	105QMB 2MB **£539**
52QMB 4MB **£399**	105QMB 4MB **£599**
52QMB 8MB **£469**	105QMB 8MB **£749**

Kickstart ROM Switch



The Power Kickstart ROM Switch fits into any A500 or A500+ and can be fitted with up to three Kickstart ROM's and can be enabled when you switch on your Amiga.
This gives you all the benefits of the new versions of Kickstart while still being able to use your old games and software.
Kickstart ROM switch (Bare) **£17.95**
Kickstart ROM switch with 2.04 **£59.95**

Chips

256K x 4DRAM **£4.50**	4MB x 8Simm **£150**
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8372 Fatter Agnus **£39**	1 x 4 Zip **£19.95**

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Simm 32 x 1MB-60 **£65** (suitable for GVP A530)
Simm 32 x 4MB-60 **£234** (suitable for GVP A530)
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2.04 Kickstart ROM chip,
Workbench software
Install disk 2.04
Font disk & extras disk **£99.95**
With ROM share **£115**

Avideo 24

24-bit graphics for the A500
768 x 580 quality resolution
16.8 million colour frame buffer
Small easy to fit circuit board
Overlay Amiga graphics & animations
Fully genlockable
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Comes with 24-bit paint package
Allows picture in picture **£599** (includes TV Paint)

Rembrandt

24-bit colour
16 million colours
A1500/A2000 **£1500**

Bare SCSI Hard Drive

52 Quantum **£199** 105 Quantum **£299**

Send your order to Power Computing Ltd, Unit 8 Railton Road, Woburn Road Industrial Estate, Kempston, Bedford MK42 7PN
Ring your credit card order through on **0234 843388 (10 lines)** or Fax **0234 840234**. Technical helpline **0234 841882**

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Power Computing U.S.A., 21 South 5th Street, Suite 900, Philadelphia, PA 19106 Tel 215 922 0050 Fax 215 922 0116

Amiga Peripherals at Perfect Prices...

New...

AMIGA 600 RANGE...

'The new addition'

That's right the Amiga Family has just grown! Not only can you purchase the A500 Plus Cartoon Classics Pack, but now, you have a choice of **two** innovative Amiga 600 models too... with or without a Hard Disk Drive built-in!

Both models carry Commodores' comprehensive new 'In-Home' Warranty Plan, unrivalled by any other home computer. There's a Telephone Help Line to assist you with those minor problems, and on the rare occassion of something more serious, you'll be pleased to know that an engineer will make a call to your home to affect a speedy repair or even replace the unit completely!

How's that for your total 'peace of mind'?

AMIGA 600 — *3.5" Floppy Disk Drive & Free Software.*

AMIGA 600-HD — *3.5" Floppy Disk Drive & 20Mb. Hard Drive.*

Because the 600 range is so new... the details given have all yet to be finalised completely. By the time this magazine is on sale we are likely to be in the position of confirming with more detail.

Specifications as we know at the time of going to press:
New Compact Design, Kickstart/Workbench 2.05, 3.5" Internal 880K Floppy Disk Drive, Built-in TV Modulator, 20Mb. Hard Disk Drive [2.5" fitted to A600-HD model only], 1Mb RAM as standard with an option to upgrade very simply to 2Mb. with RAM expansion in 'trapdoor', 2 Joystick/Mouse ports, Full Colour Composite Video output, 'Smart Card' slot [allows games on ROM to be loaded instantly... no more waiting! And... possible future upgrade port [eg. RAM cards etc], 4096 Colours, Stereo Sound, Standard Parallel and Serial ports for printers etc.

GIVE US A CALL NOW FOR A GREAT NEW DEAL ON A GREAT NEW AMIGA!

A670 CD-ROM DRIVE...

Available Soon!

Allows you to load and play CDTV software on the new Amiga 500 and 600-HD computers. New Interactive Multimedia on your new Amiga!!! Plus... you can play your favourite music CD Discs and CD+G discs] too!

Give us a call soon for further news about the equivalent 'planned' CD-ROM drives for Amiga 500 and Plus computers.

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LC 24-20 Mono	24	360	230/75	10	16	80	£209.99
LC 24-200 Mono	24	360	220/55	10	7	80	£229.99
LC 24-200 Colour	24	360	220/55	10	30	80	£269.99
XB 24-200 Col [◆]	24	360	275/80	18	29	80	£379.99
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CITIZEN DOT MATRIX PRINTERS

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SWIFT 9 Colour	9	240	160/40	4	8	80	£219.99
224 Mono	24	360	160/53	4	8	80	£219.99
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STAR	Star LC 24/200	£6.99	£32.99	£12.99	£59.95
STAR	Star XB Printers	£6.99	£32.99	£12.99	£59.95
CITIZEN	120D+/Swift9	£4.99	£22.95	-	-
CITIZEN	124D/Swift24	£4.99	£22.95	-	-
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star / CITIZEN — GENUINE ACCESSORIES

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	Font Cards	N/A	£27.99	£54.99	£27.99

Please state printer model when ordering

CITIZEN
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124D, Swift 9/24 Auto-Sheet Feeder — £94.99
124D, Swift 9/24 Printer Stand — £24.99
124D, Swift 24 - 32K RAM Expansion — £13.99
Font Cards Swift 24 (6 Different Sorts) — £39.99ea

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200 - Sheets of Continuous Paper, 5 - Continuous Envelopes, 100 - Cont. Address Labels, 1 - Amiga/Atari ST Printer Driver 3.5" Diskette

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([◆] = all FREE items EXCEPT a dust cover)

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GVP Impact Series II HD8 Hard Drives

GVP's Amiga hard drives have a reputation for quality and reliability with an excellent specification. Simply plugs into your Amiga A500 or 500 Plus side port. GVP Hard Drives can be supplied unpopulated or populated to 2Mb, 4Mb, or 8Mb using a combination of plug-in SIMMS memory chips.

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NOTE! the above prices are based on purchasing WITH an Amiga

Commodore AMIGA 1500's

NEW Vers. 2.04

AMIGA 1500 COMPUTER PACK

NEW 1500

BRAND NEW 1500 Pack - Ideal for both home and business!!!
Central Processing Unit (CPU)... 1mb. RAM, 2 x 3.5" Floppy Disk Drives, 8 Expansion Slots to take all Amiga 2000 Peripherals.
Keyboard and Mouse... With Numeric Key Pad, 4 Cursor Keys. 2 Button Amiga Mouse.

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14" Stereo Colour Monitor with Green Screen Switch AND...

With 12mths. on site maintenance

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Remember dedicated monitors give a better quality output from your computer but TV/Monitors are far better than normal domestic TV sets.

COMMODORE 1084S COLOUR MONITOR — £269.99
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DELIVERY

Small items are despatched by post to all UK Mainland addresses for a nominal fee, unless otherwise discussed. Hardware is despatched by courier service (up to 25Kg) as follows: NEXT WORKING DAY... add £7.50 to order, TWO WORKING DAYS...add £6, or for SPECIAL SATURDAY DELIVERY...add just £12. (Please note courier service applies to MOST UK Mainland addresses).

WARRANTY

Hardware proving faulty within 30 days will be exchanged for NEW (subject to condition etc). After 30 days and within 12 months from purchase, faults will be rectified by the relevant manufacturers' repair agent and returned to you by courier. Software and small items carry various warranties, just ask for details.

BFPO & EXPORT

Merlin are happy to supply BFPO and export markets for which VAT is normally deductible. Delivery charges vary from UK rates and, as products carry UK warranties only, faulty items are to be returned to Merlin by customers & re-delivery charges will apply.

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